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THE

RETROSPECT OF MEDICINE:

BEING

A HALF-YEARLY JOURNAL,

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY

W. BRAITHWAITE,

LECTURER ON OBSTETRIC MEDICINE AT THE LEEDS SCHOOL OF MEDICINE, ETC.

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PREFACE.

The practical use of medical knowledge consists, generally, in the facility and rapidity with which it can on any occasion be brought to bear on a given case. A man may be able to write an elaborate treatise on any medical subject, and yet, in a case of emergency or complexity, he may be totally unable to bring the stores of his mind into practical application at the moment when he is most in need of his knowledge. For this reason, we have adopted a new plan in the present volume: at the end of which we have compiled a "Synopsis", which will enable the practitioner to avail himself of the most practical indications of treatment which different authors have recommended within the last six months; and we purpose, at some early period, to bring out a more complete Synopsis of this description, embracing all our preceding twelve volumes. If we may judge from our own experience at the bed-side, we think such a Pocket Dictionary of Practical Medicine would be very useful; and, now that so great a variety of methods are resorted to in the treatment of diseases, such an easy book of reference becomes even absolutely necessary, to assist the memory of those who are actively engaged in practice.

Park Square, Leeds,
June 17th, 1846.

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PRACTICAL MEDICINE,

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FEVERS.

Art. 1.—ON THE LAW WHICH REGULATES THE RELAPSE-PERIODS OF AGUE.

By Robert J. Graves, Esq., M.D., &c., Dublin.

Having noted with much anxiety and accuracy the course of a quartan ague for twenty-seven months, I constructed a table for the purpose of obtaining a connected view of the number and dates of the fits. This table had been made for some time before I discovered that it contained *data* which authorize us in concluding that the law regulating the periodicity of agues applies not only to the succession of paroxysms, but is extended to the free intervals between them—in other words, that the same law of periodicity which governs the disease while it occasions fits, continues likewise to preside over its latent movements during the interval when no fit occurs, and thus the true periodic rate is carried on, though as in a clock from which the striking weight has been removed, the usual signal does not mark the termination of each certain definite portion of time.

This law, now for the first time brought to light, exhibits a new example of the tenacity with which periodicity clings to a disease, when once firmly impressed on it, and recalls to mind a very similar phenomenon observed with respect to the catamenia, which, having been suppressed for many months, not unfrequently reappear on the very day on which the monthly period would have occurred, had no such suppression taken place.

[Dr. Graves here relates the particulars of an obstinate case of ague in a boy eleven years of age. The disease was at length subdued by large doses of quinine, which, it appears, may not only be given without doing harm, but, as in this case, the disease, though complicated, may be cured solely by the use of large doses of this powerful remedy.]

With respect to the manner in which quinine was used, the following observations may be made. At first I gave it in the

usual manner, until the particular series of fits ceased ; and then persisted in its use for ten days or a fortnight: gradually decreasing the quantity taken. This is the method generally recommended by authors, and it is founded on the notion, that it is necessary where the medicine is given in large doses, not to omit its use abruptly, lest the system should feel the loss of this powerful tonic. My experience in this and other cases, leads me to doubt the accuracy of the reasoning upon which this treatment is founded, and I am convinced, that in following this rule we defeat our own object, by accustoming the constitution to the medicinal effects of the quinine at a time when the ague fit is absent. The quinine is the proper antagonist of the fit, and while the fits require this medicine, it is borne well by the constitution. On the contrary, when the fits are absent, its curative effects appear to be diminished, and the constitution becomes so accustomed to it, that, when the disease again requires it, the medicine no longer exerts its anti-aguish influence. We have an analogous example in the case of mercury, of which moderate quantities, judiciously exhibited, are sufficient to cure the venereal disease, provided the mercury is given when venereal symptoms are present, and only in the quantity necessary to control these symptoms. If it be given by way of prevention, when these symptoms are not present, or in too great quantity when they are, the system in either case becomes saturated with the mineral, but is not protected from the further ravages of the venereal disease. The second mode of treatment which I adopted was calculated to avoid the inconvenience already pointed out. This method consisted of giving the quinine for four successive days, and intermitting it for the six following days, thus embracing the interval comprehended in three fits. By these means it was hoped to keep the system sufficiently under the curative influence of quinine while we avoided rendering the constitution too familiar with the medicine ; the six-day interval preventing it from becoming saturated by the quinine. This method of treatment seems to have been eminently successful, and under its influence the disease abated in violence, the frequency of the attacks decreased, and the long interval of 136 days was at last obtained. Finding, however, that, though it had broken the violence of the disease it had not extinguished it, I tried another on the third plan, which was to give no quinine until a well-marked fit or shadow of a fit occurred, and then at once to use the medicine in large doses, so as to stop the fits as soon as possible. The moment this object was accomplished the medicine was omitted, and was not again given until the paroxysms recurred, when they were similarly treated. This, on the whole, appears the best method, as it stops the paroxysms speedily, and keeps the medicine in reserve until they reappear.

[Dr. Graves gives a long table to show the different days on which the medicine was given, and the doses. From this table it appears that the dose was varied from ten grains in the day to sixty. At the commencement, the doses each day were fifteen or

thirty grains in draughts of five grains, but at last they were sixty grains daily, in doses of five grains each.]

Dublin Quarterly Journal of Medical Science, Jan. 1846, *p.* 59.

2.—OBSERVATIONS ON AGUE

By R. Chambers, Esq., M.D., Physician to the Essex and Colchester Hospital.

[A sailor, 18 years of age, came under Dr. Chambers' care at the Essex and Colchester Hospital, in November last, affected with ague. The attack was of fifteen months standing, was a tertian, but now had become quartan; he had been subjected to a variety of treatment, and said he could not bear quinine. Countenance anæmic; pulse 60; bowels costive; urine scanty; tongue furred; feet and ankles swollen towards night; action of heart regular but laboured; a congested state of all the viscera. These were the leading symptoms when he applied at the hospital. He was ordered to be bled immediately, and ten grains of quinine in a draught. Calomel, ext. of colocynth, and ext. of hyoscyamus were given every other night,—and small doses of quinine three times daily. This treatment was continued for three weeks, and he has never had an attack of ague since. Dr. Chambers makes the following observations on the treatment of ague by quinine.]

Although the treatment of ague by quinine partakes in some measure of empiricism, we shall find, on examination, that it is based upon correct principles; and that in those cases which prove refractory to this particular treatment, the blame is attributable, not to the remedy, but to our inattention to those principles which we recognise, (and which are deemed so essential,) in the management of other diseases. It is true that quinine will alone, in the larger proportion of cases, be adequate to the removal of the disease; but in cases of long standing, we meet with congestions of the internal organs, which interfere with, or even altogether forbid its employment; and if these congestions are not removed, we shall be unable to cure the disease, although we may arrest it temporarily.

In a former communication on this disease, I stated that I had experienced unexceptionable success from the use of ten-grain doses of quinine, followed up by smaller doses; and that I had not met with a single case in which, through idiosyncracy, or other causes, I had been prevented giving the quinine. As the case which I have just detailed could not bear the quinine before he came under my care, I resolved on giving the matter a fair trial. But first let me again mention an outline of the case:—

There was congestion, and consequent inactivity, of all the excretory and secretory organs; the blood was increased in quantity, but deteriorated in quality; there existed that state which Dr.

Turnbull, in his lectures in the *Lancet*, alludes to as anæmic plethora. There was mental and physical depression, in consequence of the long duration of the disease, and its resistance to treatment. It was evident, then, that relief to the congestion was of primary importance ; yet his feeble pulse, and his weak and pallid appearance, almost forbade having recourse to depletion ; however, all doubt as to its propriety was quickly removed on referring to the heart, from the laboured action of which it was evident that the feebleness of the pulse was merely the feebleness of oppression. Accordingly he was bled to ten ounces, and took ten grains of quinine before he left the hospital, and in addition I directed him to take a glass of gin and water, as he had a long journey to go, and the day was cold. The quinine was continued for three weeks, and during the whole period it did not produce the least unpleasant effect. It is, then, I think, apparent from the result, that the obstinacy of the disease, and the disagreement of the quinine, arose from non-attention to the co-existent visceral congestion.

But to me the case appears to derive its chief interest as an illustration of a rule of practice applicable to this and several other diseases, and one not sufficiently attended to. As an example, I will take neuralgia. It must be familiar to us all to see a case that has been aggravated by iron in the hands of one practitioner, cured by the same remedy in the hands of another, with this difference, that the latter may have prescribed a few blue pills and a saline aperient ; nay, more, a remedy may be borne to a certain point, congestion may then arise, the remedy disagrees, and without any effort to remove the congestion, the remedy is condemned, and of course discontinued. Quinine and iron afford daily illustrations of this fact.

[In alluding to Dr. Graves' paper in the preceding article on the relapse-periods of ague, Dr. Chambers thinks the deductions drawn are not warranted by the facts specified, and considers it strange that practical rules for the treatment of this "generally" manageable disease should be deduced from the treatment of a case which lasted two years, and did not yield until 1680 grains of quinine had been administered. Dr. C. asks,]

Is quinine a specific for ague ? It is: but only to the extent of being the most powerful vegetable tonic that we possess. Arsenic is just as powerful an anti-periodic, but from its tendency to injure the constitution, it is very properly less resorted to. Iron, zinc, gentian, and several other remedies, denominated tonics, have been used effectually in the cure of ague, and even change of air by reason of its tonic influence has done it. Our object in using quinine in ague is, to obtain its tonic influence on the vascular system. One large dose may effect this, but in consequence of the distended state of the capillaries, we find it necessary to follow it up with repeated small doses, not as Dr. Graves supposes, lest the system should feel its abrupt discontinuance, but to keep up a stimulus to the capillaries till they have recovered their tone. It is a

fallacy to suppose, with Dr. Graves, that we ought to discontinue the quinine for fear of weakening its effects, if subsequently needed-for I contend that, if proper precautions are observedin the administration of the medicine, its continuance is the only sure and expeditious mode of overcoming the disease. He resorts to the anaelogy of mercury, in the cure of the venereal, to support his views ; but it strikes me that a closer analogy exists between the administration of wine in the debility of fever, or the exhaustion of hæmorrhage ; and let me ask, who would think of discontinuing the wine on the first appearance of reaction in either instance, lest, by continuing its use, it would lose its influence if again required ; would they not rather continue it in diminished doses, or at longer intervals, till, by its influence, aided by the necessary auxiliary treatment, the probability of relapse had passed away.

Piorry states that the paroxysm of ague forms but the second link in the concatenation, the first being splenic engorgement; and unquestionably there exists a very close connection between ague and affections of the spleen. And where a person who has resided for a time in a malarious district, removes to a healthy one, and yet becomes attacked with ague, is it not more than probable that it is by an impression made upon the spleen at first, that the disease is subsequently manifested, if aided by depressing causes. We know, from observation, that the blood of those who have imbibed the malarious poison, becomes deteriorated in quality, and is prone to accumulate, (probably in consequence of a diminution of its ordinary stimulant quality,) in the internal viscera, more especially the spleen. We also know that this splenic engorgement is best treated by tonics ; nay, that it is aggravated by the ordinary antiphlogistic treatment.

Provincial Medical and Surgical Journal, March 25, 1846, *p.* 129.

3.—ON THE CURATIVE MEDICATION OF INTERMITTENT FEVER.

By M. Bretonneau.

A sort of drunkenness, more or less painful, produced by a single and suitable dose of sulphate of quinine, repeated if necessary, two days afterwards, suppresses for eight days *simple* intermittent fever.

In the same way that with a person who is in the habit of intoxication, we find that much wine may be taken without producing this condition ; so we every day see individuals affected with ague taking great quantities of quinine, without the fever becoming suppressed, or its return being prevented.

M. Bretonneau agrees with the Jesuits who first imported cinchona, and learned how to administer it ; and with Tarti, who for thirty years practised in the hospital at Tours, that every sufficient dose of bark loses its febrifuge power by fractioning it, exactly as a dose of wine loses its intoxicating property by being divided.

It has been stated that the prolonged administration of many doses, whose sum altogether amounted to several efficient doses, has completely failed. M. Bretonneau has seen a quartan fever, which had resisted two ounces of bark, yield to two drachms of the same medicine; but the two drachms were given at once, while the two ounces were taken in very small quantities at a time, and during fifteen days.

Small doses, which habituate a patient to the action of cinchona, injure the beneficial results of adequate doses; they hurt the digestive apparatus, and render the febrifuge intoxication more difficult to obtain.

M. Bretonneau corroborates the statements of Sydenham and Morton—that the dose of bark which has suppressed a paroxysm, if repeated before the supposed epoch of its return, will prevent it; and moreover, that the immunity thus procured may be prolonged by renewed doses exhibited at gradually lengthened intervals, until a permanent immunity from relapse becomes established. The progression recommended in the giving of these preservative doses is the following:—a second dose equal to that which suppressed the fever, is to be exhibited according to the nature of the fever, on any day from the first to the sixth interval, then to be repeated after intervals of 7, 8, 9, 10, 12, 14, 16, 18, 22, 30, days. The best time for giving each preservative dose is immediately after a light dinner; and the first dose had better be given shortly after the decline of the suppressed access, so as to be as distant as possible from the next threatened paroxysm. A relapse will render it necessary to renew the treatment from the commencement. The preservative doses should be approximated if it is found that the accesses become more frequent.

From fifteen to twenty grains of the sulphate of quinine, or from three to four drachms of good cinchona, suffice to suppress the fever of an adult, and to keep it suppressed during eight or nine days. Many reasons lead to the belief, that it is useful that the necessary dose should not be exceeded.

Dublin Hospital Gazette, Dec. 1, 1845, *p.* 119.

4.—THERAPEUTIC EFFECTS OF NITROGEN IN TYPHUS FEVER.

By John Grantham, Esq.

[Mr. Grantham places great reliance on what he calls diluting the system of fever patients with nitrogenized matters; he has witnessed its beneficial effects. In some observations on this subject, in the *London Medical Gazette*, alluding to the state of the fluids in typhus fever, he says:]

The blood in typhus fever is very deficient in fibrin and blood corpuscules; in intermittent fever, also, the blood corpuscules are below the normal standard. In typhus fever the albumen is diminished, and a salt of ammonia is sometimes found in the blood.

These are all so many evidences of an imperfect action in the laws of assimilation in fever. While in health, in men of strong constitutions, the blood corpuscules are more numerous than in feeble and lymphatic temperaments. Now the red particles of the blood should in health contain 99 parts of ammonia (animal matter), and one of ashes, and if we refer to Dr. Prout's statement in reference to the composition of the staminal principles of the body, we find them to be composed of ultimate elements, in the following proportions :—

	Carbon.	Hydrog.	Nitrog.	Oxyg.
Albumen	50	7	15	20
Gelatin	47	7	16	27
Fibrine	53	7	19	19

These considerations show the importance of regulating the supply of such elements as will neutralize the destructive action of oxygen in the blood of patients suffering under typhus fever. The necessity for the consumption and reproduction of the blood corpuscules has never yet been disputed, but various theories have been propounded by different physiologists regarding the seat of their formation, and their mode of organic development or metamorphosis.

The seat of fever I consider to be the capillary structure ; it is in this structure that all the phenomena of secretion and nutrition are performed, and by the superior force of the chemical law over the vital principle. The capillaries are the seat of waste and diminution of structure and power in the body. The latter, as is well known, is an effect universal in fever. If there be one symptom more characteristic than another in fever, it is the wasting of the structures of the body; the wasting always takes place in the order in which oxygen is said to act on the body when not diluted by a due supply of hydrogen or nitrogen.

I assert that ammonia, or nitrogen, is deficient in every structure as a staminal element in typhus fever, that carbon is found in larger quantities than in health in all the excretions. In typhus fever, oxygen acts by accelerating the heart's action, and depressing the nervous influence or vital power. Ammonia acts by stimulating the capillaries of the intestines, is absorbed by the lymphatic glands, and assists in the elimination of carbon from the body, and finally passes off in the compounds of the urine. The kidneys compensate for the defective function of the skin and salivary glands, by discharging matter combined with nitrogen. In typhus fever, I consider it is impossible to alter the duration of the disease. Venous congestion, wherever it may be found, should always be relieved by depletion, either generally or locally, despite of a feeble pulse. After giving a full dose of castor oil, the carbonate of ammonia, with tincture of opium, should be persisted in, viz., ten grains of the former with ten drops of the latter every six hours for an adult, until the return of cerebral action, or cessation of stupor with delirium, and no longer, as at that time, aperients with quinine appear to be indicated. Friction to the skin with

hot lard after ablution with warm water (96 degrees Fah.) is of the greatest benefit; as oil is absorbed by endosmosis through the veins without immediately reaching the blood; when imbibed, it combines with the albumen of the plastic constituents to form cells, which pass into the veins, and serve for the nutrition of the body, and also to regulate the animal temperature. Dr. Willis read a paper before the Royal Society, "on the special functions of the skin," wherein he showed the influence which the dissipation of a certain amount of simple water by the sudoriparous glands exerted upon the current of blood returning from the peripheral parts of the body to the heart, and insisted upon this as the means by which venous endosmose or absorption was chiefly secured, showing the power of absorption and exudation in that structure.

In reference to diet, I consider water as the first and most important requirement of the blood, in consequence of the great evolution or production of carbonic acid; secondly, good beef tea, highly seasoned with spices, and salt, with barley water or gum water; this diet to be given during the exhibition of the ammonia and opium; when quinine is indicated, then I would recommend port wine in addition to the above diet, and gradually return to a solid diet. On a general review of the foregoing observations, the most prominent symptom in typhus fever appears to be waste of the structures of the body, not simply attributable to the superiority of chemical over the vital action, but to more remote causes, namely, the quality of the air respired, and the quality and quantity of the food digested (as abstemiousness in animal food is considered beneficial by those whose experience has been great, especially in tropical climates: they observe, that the less the inhabitants partake of an animal diet, the more exempt are they from fever); and the question arises, are these causes acute or chronic? I should say, decidedly chronic. It appears impossible to conceive typhus fever occurring suddenly when the blood is in a healthy state and the brain active. Experience fully attests the languor and debility of the system during the premonitory symptoms of typhus fever.

[Most medical men know the value of sesquicarbonate of ammonia in typhus, but for our own part we should be careful how we combined opium with it, as described by Mr. Grantham.]

Medical Gazette, Dec. 12, 1845, *p.* 1426.

5.—ON TYPHUS FEVER.

By Dr. Corrigan, Dublin.

Let us, as we stand at the bed-side of a patient in typhus fever, recollect that in looking at the extent of the maculæ, or for the presence of petechiæ, or examining the distended vessels of the conjunctiva, we are looking not at a mere local derangement, but that we are studying in these external indications the state generally of the circulatory system as a whole. In this view we can

understand why we attach importance to the colour of the maculæ, why we look upon rose-coloured maculæ as a good sign, and dark coloured maculæ as indications of danger. The dark coloured maculæ are indications of danger, because their colour is owing, we know, to an enfeebled circulation. The feebler it is, the darker will be the colour of the maculæ; while the more energetic is the capillary circulation, the more vivid will be the colour of the blood passing through it. In this view we can also find an explanation of the fact, that a patient may have an intellect not disturbed, may have a cool skin, a clean tongue, a soft abdomen, a pulse not above 70 or 80, with volition and sensibility perfect—and yet die of typhus fever in seven or eight days. Of what does the patient die in such a case? He dies of this lesion of the function of circulation. In most cases this lesion is not the only one present, although often the most prominent; but I wish to fix attention on it in this that I may call an analytic view of fever, as it leads to a practical rule for the administration of one of our most important agents in the treatment of fever, viz., wine. You are too often bewildered in the directions as to its employment. You are told to beware of delirium in its administration, and yet, again, you read that delirium subsides under its use. You read instructions either to refrain from its use when the tongue is dry, or to judge of the propriety of continuing its exhibition by its effects on the tongue. Instead of attempting to reconcile all the contradictory statements, and, too often, inexplicable advices, that are laid down for you, turn from the books to the living book—the patient—and read from him. Ask yourself what is it in typhus fever you prescribe wine for? Is it for delirium? No. Is it to prevent its approach? Again, no. Do you give it for a dry tongue? Certainly not. What is it that, as you consider a patient's state, would lead you to think of its employment?—is it not the state of the function of circulation, taken as a whole, indexed to you by the pulse, on the one hand, and by the state of the capillary system of circulation in the skin, on the other.

It is for this you give it. It is the specific remedy directed to remedy the general lesion of the function of circulation, and hence in its administration you may give it, and you must give it, whether there is or there is not delirium; for delirium may be present or absent in a case requiring its exhibition for the function of circulation. You should give it indifferently, whether the tongue is moist or dry; for the tongue may be either, and yet wine may be required; and hence the tongue becoming moist is not an indication that you may dispense with its use—nor its continuing dry, a sign to make you discontinue it. You may give it with a soft abdomen, or with an abdomen tympanitic, for similar reasons. You are giving wine, recollect, as the specific remedy for the lesion of the function of circulation (remember always comprising under this the capillary and cardiac circulation); and by the change in the circulation, and by this alone, are you to judge of the neces-

sity of continuing, decreasing, or augmenting its dose. Under its exhibition, you will see the vessels of the conjunctiva contract, the maculæ become rose-coloured, and the patches of skin in the face. and on dependent portions of the body, lose their dark livid hue Keep this, then, in mind, the lesion in fever for which you give wine is the lesion of circulation, and if this function from debility require it, you must give it under all circumstances of derangement of other functions. Of the quantity required, it is quite impossible to lay down any rule. No two cases will have exactly the same amount of depression of circulating energy ; no two cases will require precisely the same amount of wine. In some cases. four to six ounces are enough for a few days, in continuance, to restore the circulation to sufficient tone ; in other cases it requires as much as one ounce of wine every hour, or 24 ounces in 24 hours ; and even in addition to this, as much as eight ounces of brandy ; and all this barely sufficient to preserve the circulation from sinking.

We must never abandon a case of fever, as long as there is life ; we must remember what the *post mortem* of the case of Redmond tells us, that in its present form there is no structural disease; that the patient, even in the dying moment, is sinking from a mere lesion of function, and that even then, recovery is not hopeless ; and we must recollect what clinical observation of several cases even now under our own observation in the hospital tells us, that the patient one day, in a state seemingly moribund, may on next day, or within twenty-four hours, be out of danger. It will not unfrequently happen, that even the power of swallowing is lost for several hours ; that a small portion of brandy or wine can only be got down by raising the patient in bed, throwing spoonfuls of brandy into the pharynx, and then holding up the patient's head until it descends to the stomach, apparently almost by its gravity. Even thus it sometimes cannot be passed along to the stomach, but even then we can stimulate the circulating system by injections ; and in some cases which you have seen, I am confident the preservation of life has been owing to æther, given in the form of injection every two hours, in quantities of two drachms, until under its stimulating effect the circulation gained some vigour, and the power of swallowing returned.

With the same object of stimulating the capillary circulation, blisters are applied in succession over the surface. The nurse is supplied with four or six small blisters ; one after another is applied, with intervals of six hours between them, over chest, abdomen, thighs, and legs. They are thus applied, not as counter-irritants, not to act as derivatives on internal structural disease, but as stimulants to excite the capillary system. An action produced in any part of it, will be conveyed through the whole, and thus their action on the skin coincides with and assists the action of the internal stimulus of wine, ammonia, and brandy.

Dublin Hospital Gazette, March 15, 1846, *p.* 280.

6.—REMARKS ON THE PATHOLOGY AND THERAPEUTICS OF TYPHUS.

By Dr Richter.

Dr. R. considers that the nervous symptoms in typhus are not dependent on the morbid changes in the mucous membrane of the intestinal canal, for he has observed them before degeneration of that tissue had commenced, and *vice versa*, they have disappeared before the membrane had recovered its healthy state ; and, moreover, there are other diseases where the intestinal membrane becomes degenerated, and nervous symptoms are not present during any part of their course. The nervous symptoms of typhus depend much more on defective nutrition of the organization generally, as well as of the nerves in particular. This is confirmed by the etiological conditions of the disease, such as those which exert an influence on soldiers in the field, particularly mental depression, grief, care, exertions causing physical exhaustion, and food deficient in quantity and improper in quality. The connection between the nervous symptoms and defective nutrition is also confirmed by the facts, that death from starvation exhibits all the nervous symptoms of typhus, and the injection of putrid organic matter into the veins has a similar effect. Further proof of this connection is borne by the physiological and chemical researches of Andral and Gavarret into the nature of the *typhoid* state. As a consequence of this condition, the proteine (i. e. the albumen and fibrine), and the fatty matter become absolutely diminished in quantity, while the blood-corpuscles and alkalies are relatively increased. Inasmuch as in typhus the fibrine is absolutely diminished, a much less quantity of it passes into the lungs for oxidation, and, accordingly, the organic metamorphosis going forward with less intensity, the debility and weakness of the patient becomes manifest. The deficiency of the oxide of proteine, as the author satisfactorily proves, is brought about in this way, too few blood-corpuscles (by means of which the organic acids and acid salts are formed from the decomposed organic substances in the venous blood), are set free to be converted by the process of respiration into fibrine. Hence, there is not enough of oxide of proteine taken into the organs as is necessary to compensate for the organic matter decomposed. The quantity of the decomposed organic products is in proportion to the quantity of acid produced in the lungs ; and hence, too, the solution of the blood-corpuscles and the formation of fibrine is in equal proportion. Hence, one of the chief symptoms of the typhoid state, viz., diminution of the biliary secretion, becomes evident. According to Schultz and Hunefeld, the bile is composed of some of the products of the decomposition of proteine, compounds of fat, the decomposed envelopes of the blood-corpuscles, and hematosine. But as now these products of decomposition are present in too small a quantity, and the fat, before it arrives at the liver to form bile, is destroyed by the excess of oxygen, so it is clear that the bile must be secreted in

too small a proportion. What then does nature do to effect a cure? She excites a febrile state so as by means of an increased rapidity of the circulation and respiration to hasten the oxidation of the fibrine in the typhous blood to form a larger quantity of the oxide of proteine. To give nutritive diet to a patient in this state is to increase the disease, because the food must first be converted into chyle, and that into blood-corpuscles; but here the organic metamorphosis stops, no fibrine being formed. The indication in the treatment is to produce fibrine, and this can only be done by means of substances which favour the metamorphosis of the blood-corpuscle into a fluid plasma. According to the experiments of Hunefeld, chlorine exerts the most powerful action in the solution of the envelopes of the blood-corpuscles. On the decomposition of the envelope, the nucleus of the corpuscle, the true representative of fibrine, remains undissolved; but this result, according to Hunefeld and Mülder, may be brought about by the salts of ammonia, the carbonate or phosphate. Hence, it is without doubt clear, that the alternate exhibition of chlorine and ammonia, as employed by the author to produce the oxide of proteine, which was intended to cause the metamorphosis in the capillaries necessary for cure, strongly supported the struggles of nature to effect recovery. According to the author, calomel, given from ten grain to scruple-doses, has a similar effect. The chlorine is exhibited in the form of c. oxymuriatic acid.—*Casper's Wochensch. No.* 11, 12, 1845.

Northern Journal of Medicine, January, 1846, *p.* 47.

7.—A NEW CONTAGIOUS DISEASE.

Reported by George Ireland Mills, Esq.

[As many as seven members of one family residing in the neighbourhood of St. Pancras, London, became attacked with disease in the course of one month. Three of them, young men, were admitted into the Middlesex Hospital, two of whom died there. The mother attributed their illness to the stench from a drain or sewer in the neighbourhood of her house, and at the inquest held before Mr. Wakley, the resident medical officer of the hospital, Mr. Corfe, attributed their disease either to a poisonous animal effluvium, or to the poison of bad meat. This gentleman in giving his evidence stated that]

The symptoms of the three patients in the wards were so exactly similar, that to describe one was to describe all. Each brother had suffered from extreme difficulty of swallowing, in consequence of great swelling around the jaws and throat, depriving them also of voice. One of them (John) was quite deaf from the swelling; and there was in each perfect constipation, and an excessively fœtid discharge from the nostrils and mouth, such as he had never seen before, excepting in a case of human glanders. Soon after admission, a pustular eruption broke out all over the bodies of William and Henry, especially at the nates and rectum.

In each case the pulse was under 100, and quite of a natural character ; no febrile nor constitutional irritation, in fact, existing in either patient. Excessive hunger, the utmost craving for animal food, chops, and steaks, and for porter, beset them. Leeches were applied to the jaws, ice was constantly kept on the throat and mouth, wine and beef-tea were ordered, and the chlorate of potash was given internally. In a week the knees, elbows, and wrists became red, swollen, (not swollen, however, in Henry), and very painful ; but although purulent matter collected in those joints, there were no symptoms of phlebitis. At the post-mortem examination of William, who died on the 13th, both knee joints, and the wrist-joint on the right side, were found filled with thick purulent matter, and a large collection of purulent matter was discovered in the body of the muscle of the left arm. No evidence of phlebitis existed. The larynx, the windpipe, the upper part of the œsophagus, and the gullet, were extensively ulcerated, presenting extreme redness of the whole lining membrane, extending as far as, and stopping at, the stomach and lungs respectively. No morbid appearance, nothing unusual, was found in the stomach ; but that organ being passed, the duodenum exhibited remarkable transverse ulcerations, eight or ten in number, (such as are seen in poisoning with arsenic, or corrosive sublimate), taking the course of the valvulæ conniventes, completely destroying the texture of the valves, looking, for instance, "as though rat-eaten," so totally were they gone. Yet the mucous membrane of the stomach was perfectly healthy. Some trifling depositions of pus were found in the windpipe, and a few ulcerations about the gums. At the back of the throat a slight swelling was found, but not sufficient to account, in William, for the difficulty of swallowing. The body was greatly emaciated. All the patients were perfectly sensible on admission, but delirium came on twenty-four hours before death. The only case of which Mr. Corfe had ever read, at all resembling these, was one described in Arrowsmith's analysis of W. Horn's essay on the "Sausage Poison," quoted in Dr. Christison's "Treatise on Poisons," from page 638—of which latter work he quoted the following passage, tending, as he (Mr. Corfe) considered, to qualify any suspicion which might have been entertained, that the present cases came under the denomination of human glanders:—

"The symptoms of poisoning (with animal matters rendered poisonous by modified putrefaction) seldom begin until twenty-four, or even forty-eight hours after the noxious meal, and rather later than earlier. The first symptoms are, pain in the stomach, vomiting, purging, and dryness of the mouth and nose; the eyes, eyelids, and pupils then become fixed and motionless; the voice is rendered hoarse, or is lost altogether; the power of swallowing is much impaired; the pulse gradually fails, frequent swoonings ensue, and the skin becomes cold and insensible. The secretions and the excretions, with the exception of the urine, are then commonly suspended, but sometimes profuse diarrhœa continues throughout.

The appetite is rarely impaired; fever is rarely present; and the mind continues to the last unclouded. Fatal cases end with convulsions and oppressed breathing, between the third and eighth days. In cases of recovery the period of convalescence may be protracted to several years. The chief appearances in the dead body are, signs of inflammation in the mucous membrane of the alimentary canal, such as whiteness and dryness of the throat, thickening of the gullet, redness of the stomach and intestines; also croupy deposition in the windpipe; great flaccidity of the heart; and a tendency of the whole body to resist putrefaction."

His (Mr. Corfe's) opinion on the nature of these cases and their origin, was, "that the disease was produced by an animal and not a vegetable poison, making a marked distinction between the two sources of disease. It may have been produced by poisonous meat,—diseased pork, for instance,—by the carbunculous matter of such meat, but whether eaten or respired in the form of effluvium he could not say. There was, he considered, no mystery in the cases as regarded the cause; not the slightest doubt existed in his mind, or in the minds of his colleagues, after having watched the cases from the day of their admission, and attended the autopsy, that the cause of the disease was poisonous animal matter, either respired or eaten."

The coroner did not assent to this opinion.

[The inquest being adjourned, the coroner visited the house, but could discover no reason to suppose that any effect could be produced upon the health of its inhabitants from the drains in the neighbourhood: this was not stated by the coroner at the inquest, but was an inference drawn by Mr. Mills after examining the premises. The body of Henry Lambert, who died last, was examined, and extensive ulcerations, with depositions, were found on the edges of the larynx and glottis, and in the venticles of the larynx and pharynx. As it was arranged that the medical men who had attended the other members of the family should appear at the adjourned inquest in order to give their evidence as to the nature of the disease, Mr. Corfe declined giving further evidence, until they should have been examined. The result was, that his opinion became somewhat modified; he now doubted whether the disease arose from poisonous *animal* matter, although he still ascribed it to a poisonous effluvium of some kind or other; he could not give a name to the disease.]

Lancet, Dec. 6, 1845, *p.* 613

8.—*On the Treatment of Scarlatina by the Acidum Aceticum Dilutum*, By Isaac B. Brown. Esq.—[When called to a case of scarlatina, in its early stage, when the skin is beginning to shew the efflorescence, and the tonsils and fauces are also of the same scarlet blush, Mr. Brown applies caustic, in the stick, to them,—and has the throat rubbed with liniment containing camphor, soap lini-

ment, and laudanum; or warm poultices where the skin is too irritable to bear the liniment. Then, he adds,]

As soon as the bowels are relieved, I give to a child under three years of age, the following mixture:—

Take of diluted distilled vinegar, two drachms; syrup, four drachms; distilled water, two ounces; mix and take a fourth part every three hours.

And in proportion to the age increasing the quantity of acetic acid: and after fifteen, I give two drachms as a dose, and gradually increase it in proportion to the degree of fever. I mean by the dilute acid, that which is made of one part of the acetic acid of the pharmacopœia to seven parts of distilled water:—as,

℞. Distilled vinegar, one part; distilled water, seven parts.

I desire the patient never to be removed from bed, and inculcate the necessity of maintaining an equable and cool temperature of the body, by keeping strictly to the one room where the fever first showed itself.

I never allow the night clothes to be removed during the efflorescence; and believing the most effectual way to save my patient to be, strict attention to the tonsils and fauces, I apply once, twice, or thrice during the day a solution of caustic. (Nitrate of silver in the proportion of ten grains to one ounce of distilled water.) The application is effected by tying a small piece of sponge on the end of a black lead pencil, or a thin piece of stick, dipping it in the solution, pressing down the tongue with a spoon, and sponging the tonsils and fauces thoroughly, removing all that peculiar viscid phlegm which is so marked in this disease; the relief this gives the patient is most striking: the respiration, which was most difficult and short before, now becomes free and full; the pulse soon partakes of the benefit, and the countenance is relieved from anxiety and distress, and assumes a more cheerful appearance; deglutition, before difficult and almost impossible, becomes comparatively easy, consequently nutriment can be readily given; and I again repeat, that I lay great stress on the judicious and careful administration of nutriment.

Northern Journal of Medicine, January 1846, *p.* 31.

DISEASES OF THE NERVOUS SYSTEM.

9.—TREATMENT OF INSANITY AND NERVOUS EXCITEMENT.

By Joseph Williams, Esq., M.D.

[Dr. J. Williams strongly recommends the use of narcotics and other remedies, calculated to produce sleep, not only in order to put off, but even to cure an attack of mania. He observes that]

Some of the mildest cases which occur, where there is preternatural excitement with vigilantia, are those of persons having over-fatigued the mental powers by continued application, more especially if confined to one subject; and the ill effects seem to be produced more frequently in those whose hopes and fears are in addition adding to the excitement, as is often noticed in junior barristers and students at our universities.

Now, in such instances, if a young man apply early, the case is usually cured very rapidly, sometimes even within twenty-four hours; if passed over for a few days, recovery is retarded, and if totally neglected, phrenitis or mania by no means unfrequently ensues. In such cases there is great *action*, which is but too frequently mistaken for *power;* the pulse is quick, perhaps 100, 120, or even more, tongue white, face flushed, throbbing and heat of the temples, rolling, sparkling, and injected eye, rapidity of speech, and every thing showing great excitement; now this description is not sufficient to guide us as to the treatment, for all these symptoms may depend on excessive nervous irritation, but more attention must be given to the pulse; if the pulse, in addition to being quick, is also full, hard, and bounding, and if the skin is dry and hot, then the abstraction of blood, both general and local, will usually be necessary, and often within an hour or two after depletion, the skin becomes moist, and the patient falls asleep. But what I am the more anxious to particularize, is the opposite condition, where bleeding is unnecessary and unsafe. Supposing the pulse to be quick, soft, and fluttering, weak, or intermittent, the skin moist and clammy, and yet the excitement just as decided as in the other case, to bleed here is most improper, and many cases of insanity have arisen from such practice. The judicious administration of a narcotic will frequently act as a charm, and we have often found the following prescription very useful:—

℞. Tr. Hyoscyami ♏ xxx.; Tr. Humuli ʒij; Camphoræ gr. v. ad x. aut. xv.; Syr Auranti ʒii.; Mist. Camphoræ ʒvj.; M. et fiat haustus, h. s. s.

This has often caused calm and refreshing sleep; and the patient, who has previously passed two or three nights with great restlessness and watching, feels himself invigorated, and receives his medical attendant with the greatest gratitude.

[Amongst the remedies for procuring sleep, Dr. Williams notices *bleeding*. This should not be adopted, unless demanded by very urgent symptoms, lest the constitution should not be able to rally, He remarks here, that]

A very efficient way of relieving head symptoms, when dependant on visceral congestion, more especially of the liver, is applying leeches to the rectum, and if considered necessary, subsequently placing the patient in a warm bath; a large quantity of blood may be lost in this way without producing much prostration.

Many cases of insanity arise from extreme irritability dependent on prostrated power; and to support this power by good nutritious food, and sometimes even with brandy and wine, at the same time

soothing the system by procuring refreshing sleep at night by morphia, will speedily evidence the advantages of such treatment. The great error originally was, allowing the powers to sink; it is of the greatest importance that these powers should be supported —the nervous excitation must be calmed. In these cases, mistakes are but too frequently made; *irritation* is confounded with *inflammation*. The maxims so ably taught by Mr. Travers are forgotten; the object being to calm the action, not to diminish the power—this nervous power being much more easily depressed than raised. Should this advice be neglected, and bleeding be ordered, stupor, or coma, or confirmed mania may be the consequence. In many cases where there is the most ferocious delirium with great muscular power, yet where the pulse is very quick, weak, and fluttering, even the slightest depletion at once knocks down the powers; and even if the patient should again rally, there is great danger of his becoming idiotic. As Dr. Marshall Hall has so truly stated,—under *irritation*, exhaustion is sooner produced than in health; while under *inflammation*, the system bears loss of blood, with less exhaustion than in health.

When a patient is in a highly excited state from loss of blood, a full dose of opium is the best medicine we can employ, and it is often successfully prescribed in that highly nervous state so closely resembling mania; and if, when that excessive restlessness occurs, which precedes puerperal mania, a full dose of opium be given, such as 1 gr., $1\frac{1}{2}$ gr., or 2 grs., this formidable disease may be often prevented, and as a prophylactic, opium may be considered invaluable. In some instances Dover's powder, or morphia, may be preferred; but generally the opium itself is more valuable in these cases of exhaustion.

Anæmia of the brain, so strongly pointed out by Dr. G. Burrows, has been but too little regarded until lately, Many cases where there is great action, require stimulants and support; thus, in the case of a young man, æt. 44, [?] mentioned by Abercrombie, there was at first great depression, want of sleep, with incessant talking: reaction took place, excitement increased, pulse 160, continued talking, and obstinate vigilantia; yet stimulants were here required, as after death no traces of inflammation could be found.

[*Purgatives* may procure sleep, by diminishing vascular action, where bleeding is inadmissible. *Narcotics*, when given in insanity to procure sleep, should be administered in *full doses*. Dr. Williams says on this point]

It is impossible to limit the extent to which opium may be required; but in stating that a full dose is necessary, from two to five grains may be considered a large dose for most constitutions; where habit has impaired its effect, one and even two drachms of solid opium have been taken in a very limited period. Pinel knew 120 grains of opium given in one dose to a patient suffering with cancer of the uterus; and I have seen a wine-glassful of laudanum taken at a draught, and this has been repeated three times daily for months—such cases, however, necessarily form the exception.

Dr. Burrows has never ventured beyond five grains, and generally begins with three grains, repeats one grain every two or three hours, never allowing it to exceed twelve grains, when, if sleep have not resulted, he desists. This must be admitted as a far safer practice, than to give fifteen grains or two scruples for a dose, as advocated by some.

If prescribing opium to a person not habituated to its influence, the second dose should be smaller than the first, by combining it with calomel or antimony, or James's powder, it does not so much disturb the usual secretions; there are cases where Dover's powder, and occasionally even the pulv. cretæ comp. c. opio may be necessary. It is well to remember that when opiates are indicated in cases of insanity, the dose must be large. Combining opium with camphor or henbane or digitalis, will often be very judicious. With tartar emetic, calomel and opium in large doses will often calm the system when there is great restlessness and fever, especially if the head be kept cool. Opium should never be omitted where insanity has succeeded constant intoxication; and in those cases where the countenance is exsanguined, with a cold clammy skin, it is especially indicated, and is no less useful in that anæmial state of the brain, where there is great exhaustion, in whatever way produced.

Where there is constant vomiting, opium may be administered in an effervescing draught. Opium is now rarely ordered from day to day as formerly, having given place to the preparations of morphia, but should it be considered necessary, it will be advisable to combine it with some aloetic preparation. The infusion of opium with a bitter, as recommended by Dr. Paris, will secure the narcotic principle without interfering with the intestinal secretions.

If opium be ordered solely as a hypnotic, it should not be in combination with aromatics, as is the case with black drop; for although this preparation is stronger than laudanum and decidedly more anodyne, yet its narcotic power is considerably diminished, while its stimulating effects are augmented.

The liquor opii sedativus is undoubtedly much milder in its effects, and less stimulant than laudanum, and many years ago I made it the subject of experiment, in order personally to determine as to its efficacy, and I found it more uniform and certain in its effect, while it did not cause the disagreeable waking symptoms so often noticed when an opiate has been given. Many persons who slept well with it, passed a restless and uncomfortable night when laudanum was substituted for it. Battley's solution has been of the greatest service, and I believe it to be surpassed by no preparation, except the hydrochlorate of morphia.

When opium has disagreed with a patient, a strong cup of coffee will often remove the unpleasant effects.

Administering an opiate in the form of enema renders it much milder, and at the same time secures its sedative and narcotic influence, without producing that headache, sickness, and dryness of the fauces, so often complained of when opium is taken by the mouth. Dr. Burrows has found it induce sleep, sooth and relieve

delirium, when, if administered by the mouth, mania would have become worse. The French, who use enemata more than ourselves, are very much opposed to introducing opium in this manner; this is somewhat singular, as the effects are generally milder than when taken by the mouth. This is a good plan of administering medicines when patients obstinately refuse to take them.

If narcotism be highly desirable, and neither of these modes seem practicable, rubbing the abdomen with laudanum and oil will sometimes be found effectual. This practice was adopted by Whytt; when he found a patient could not bear laudanum, he ordered three or four tea-spoonfuls to be rubbed over the stomach and belly; this, if necessary, he repeated every six or eight hours. He also mentions the case of a woman who suffered from vigilantia and took opium internally; and a solution of opium in spirit of wine was often applied to her head and neck, and always gave her ease. Mr. Hill found, when there was disturbed sleep, rubbing the head with lin. camph. fort. ʒ ss. of opium to each ounce, was no contemptible auxiliary in procuring rest; and opiate frictions were insensibly used and strongly recommended by Dr. Chiaragi of Florence.

These narcotic frictions over the head will be often found useful: even brushing the hair with a common hair brush for half an hour, will frequently tranquilize a nervous and irritable patient. In some cases it may be necessary to rub the scalp with liniments, or ointments, containing morphia, belladonna, veratria, or aconitine.

Morphia.—Where opium disagrees, morphia will often be useful: it has been found that the narcotine of the opium causes many of those distressing sensations of which patients complain who have been under its influence. The acetate was the first preparation of morphia introduced, and was largely employed with great satisfaction; still, however, it was noticed, especially when a large dose had to be prescribed, that peculiar spasmodic effects ensued; and the hydrochlorate having been subsequently tried, was found immediately to produce its direct calming and sedative effect, without the distressing jumps and twitchings so often noticed when the acetate had been taken: and general experience now fully proves that morphia may be given without producing that headache, dryness of fauces, vomiting, and subsequent distress, not unfrequently caused by opium, so that when this disagrees, morphia may be tried with more than probable success. Another great advantage of morphia is that it may be continued daily for weeks and even months undiminished in effect, without increasing the dose, and without producing any disagreeable or troublesome symptoms, when, if opium had been thus administered, dementia or idiotism would have probably ensued. The hydrochlorate stimulates less than the acetate, and is the most valuable remedy we possess for calming excessive excitement.

Digitalis was employed by Dr. Cless, of Wurtemberg, in delirium tremens, in full doses repeated every two hours. He says, that when narcotism occurred, recovery followed.

Hyoscyamus has in numerous cases special advantages. It is much less apt to produce bad dreams than opium; it has no tendency to induce constipation; it increases the renal and cutaneous excretions. Its calmative and tranquillizing effects even when it fails to cause sleep are most admirable.

Opium in combination with hyoscyamus is often rendered much milder and more uniform in its action. With camphor, henbane is very useful in producing sleep and tranquillizing the irritability of the insane, and has been recommended by numerous authorities. Some are in the habit of giving five grains of each every four hours; but Dr. A. T. Thomson prefers one large dose of ten grains of each, to repeating smaller doses. From v. to x., xv., or even xxx. grains of the extract may be given at once; when necessary to be repeated, from gr. v. to gr. x. may be considered an average dose. If an over-dose be given, it may occasion stupor, vertigo, convulsions, and even coma.

It will here be necessary to give a caution as to exhibiting henbane as an enema; several fatal cases have resulted from this indiscretion; and therefore it should never be given in this form.

Camphor acts first as an excitant, the heart's action is increased, blood is thrown to the surface, diaphoresis succeeds, the pulse then falls, and sleep follows; owing to its diffusibility it acts more rapidly than other narcotics. If given in small doses, it acts only as a stimulant, and it is with such intention Dr. Sutherland combines it with myrrh in cases of debility. From ten to fifteen or twenty grains must be given to produce its sedative effect; if half a drachm be administered, it acts very powerfully as a narcotic, and is often found very useful in calming delirium. It may be necessary to combine it with opium, hyoscyamus, digitalis, nitre, ipecacuanha, or antimonials; the choice of course depending as particular symptoms may indicate.

In camphor, as with hyoscyamus, although acting for a short time as an excitant, yet a calmness speedily succeeds, and the pulse falls. These two combined will often lower the pulse in mania considerably, and Dr. Hallaran considered if it did no other good, it reduced the febrile diathesis.

Belladonna, by diminishing the sensibility of the nervous system, may cause sleep in maniacs. Some physicians, however, object to its employment, believing that patients often awake from the slumber which it induces, more troublesome and violent than before.

As illustrating the beneficial effect which may sometimes be obtained from its endermic administration, the following case is quoted.

A publican, aged 36, an habitual drunkard, subject to attacks of delirium tremens, was visited by Mr. Flood, of Leeds, who found him with the usual symptoms indicating delirium tremens; pulse 100, weak and irritable, tongue clean, urine scanty, dark, and offensive, blood voided in large quantities by stool; insomnolent for a week. Head to be shaved; twelve leeches to temples; cold lotions;

strong purgatives till bowels relieved. Within eight hours the bowels had been freely emptied; pulse 100, no sleep, great restlessness and agitation. The hydrochlorate of morphia in *two*-grain doses, subsequently increased to *ten* grains, with *one grain and a half* of tartar emetic, also increased to *eight* grains, were administered every two hours, with two table spoonfuls of the following mixture:

℞. Ammoniæ sesquicarb. ℈ij; tr. opii ʒi. (subsequently increased to ℥i.); mist. camphoræ ℥viij; m. ft. mist.

The next day no improvement; no sleep; cupped to eight ounces; narcotics increased.

Has been gradually getting worse up to the seventh day of attendance. Hyoscyamus, opium, and morphia, in every form, with digitalis and antimony, cold affusions, and his *usual stimulus*, all have failed—pulse 110, weak and irritable—ungovernable.

Eighth day. Bowels have been well cleared by castor oil, and a blister has been raised between the scapulæ. The cuticle was stripped off by Mr. Flood to the extent of three inches by two inches, and covered by a layer of pure extract of belladonna. It excited acute pain, which subdued his previously boisterous condition; the pain ceased in three minutes; in five minutes, twitchings of arms and facial muscles; appeared intoxicated; the pupils, before contracted, in seven minutes became fully diated; drowsy. In nine minutes the belladonna was removed, the patient being in a profound sleep, which continued for seven hours, neither disturbed nor stertorous. The pulse was at first 110, small and irritable; in five minutes 140; in twenty-minutes 160; it then gradually fell, and in six hours it was 108, full and soft. He awoke quiet, but very soon became excited.

Tenth day.—Has been watchful since last report; opiates have produced no effect; apparently sinking from prolonged excitement. Another blister to be placed rather higher up than the former. Belladonna again applied; sleep followed in twenty-six minutes, which lasted four hours and a half; he awoke perfectly subdued, pulse having fallen to 70; passed a tranquil night, although without sleep; and after this gradually convalesced.

Antiperiodics.—Insanity is somewhat periodical; and it should be remembered, that, when it is intermittent, it is not inflammatory, and in such cases, arsenic, tr. ferri sesquichloridi, the preparations of zinc, and copper, with tonics, may be often usefully prescribed. Arsenic can be strongly recommended in these cases, and has been given with the greatest advantage; it appears to alter the sensibility and irritability of the brain. Quinine is sometimes given with the same intention; thus, a case of insomnolence was cured by giving gr. vj. of quinine at bed time. M. Barbier of the Hôtel Dieu, Amiens, ordered it, because every evening there was nervous agitation with pain, occurring *periodically*. Quinine was given two nights, the patient slept well—omitted, no rest—when again administered, six or seven hours of sound sleep followed. Quinine may be useful in many other cases—it acts very powerfully on the

nervous system, as is proved by those temporary cases of blindness and deafness not unfrequently caused by large doses, especially when continued for a lengthened period.

The *Douche*, the author most properly remarks, should never be resorted to, except when imperatively necessary; and the application of the *ice-cap* will generally be found far more efficacious.

Our object is *to keep the head cool*,—and not to make it suddenly cold, and then suppose, that we have done enough If this be not kept in view, we may have strong re-action,—and mischief, in place of good, through the injudicious mode of employing one of the most efficacious and certain remedies which can be resorted to in certain cases.

Monthly Journal of Medical Science, December 1845, *p.* 912.

10.—*The Action of different Drugs upon the Mental Faculties.*—By M. Otto.—Each drug, besides its general and special action upon the organs of the body, exerts at the same time an action upon the mental faculties. The stimulants increase to a greater or less degree the quantity of blood which flows into the brain in a given time; as a consequence of this, the whole brain is excited, provided the stimulation does not exceed a certain limit; but the local excitement differs according to the different stimulant employed. Thus, ammonia, musk, castor, wine, and ether increase the powers of imagination and perception; the empyreumatic oils cause peevishness, melancholy, and visions. Phosphorus acts upon the generative functions; so also does iodine, and at the same time induces sadness. Cantharides excite, and camphor diminishes the sexual propensity. Arsenic causes melancholy; gold, hope; mercury, increased sensitiveness, (mental); and carbonic acid gas, placidity. Among the narcotics, opium stimulates the sexual desires, the intellectual powers, and the imagination. Belladonna dulls the mental faculties; hyoscyamus causes moroseness, jealousy, and violence; cicuta weakens the understanding; digitalis diminishes, and saffron increases the sexual desires; canabis causes calmness; and amanita muscaria, courage; tobacco operates in the same way as opium.

Northern Journal of Medicine, March, 1846, *p.* 179.

11.—*On Delirium Tremens.*—By Dr. Corrigan, Physician to the Whitworth and Hardwick Hospitals. [In a clinical lecture delivered by Dr. Corrigan, some very valuable remarks are made on the different kinds of delirium tremens, and their treatment: in speaking of what is generally considered the asthenic form of this disease, he observes:]

A man comes under treatment, not after a few days' illness, but for a considerable time he has been subject in the morning to symptoms similar to those that follow the exhibition of large doses

of opium, or of stimulants - symptoms, in fact, resembling collapse. His stomach is sick in the morning, the skin is clammy, and he is unable to collect his mind for any purpose until the accustomed stimulus is renewed. In this way he continues for an uncertain period of time, till at length vomiting sets in; he can no longer drink, and now the state of collapse, or nervous irritation, such as precedes an attack of acute disease, comes on, and obliges the patient to seek advice. He cannot sleep; images of various kinds float before his eyes; his stomach is sick; pulse quick and weak; skin cold and clammy—a set of symptoms constituting, as I have said, a state of collapse consequent on the cessation of long-continued stimulants. Your patient is altogether in a condition in which death may occur at any moment, so that the prognosis here is exceedingly uncertain.

In these cases it is necessary to give stimulants and opium; the opium, you are to remember, is given to allay irritation, and the stimulants in order to bear up the system.

Cold douching and a variety of other remedies may be used; but upon them it is not necessary to dwell, as they are sufficiently noticed in every book you meet with. There is one particular symptom observed, usually I think about the second or third day, and one which is never absent; I allude to the tremulous motion of the fibres of the tongue, not of the whole body of the organ, but of a sort of independent motion of individual fibres here and there. The same thing is seen in the orbicularis muscle of the mouth. These signs are sufficient to lead us to a knowledge of the previous history, though the patient himself should deny the circumstances. It often happens that the patient has received a wound in some way; for instance, thrusting his hand through a pane of glass. Now, if, while you are giving the opium, you watch the appearance of such a wound, and find that, instead of secreting the natural purulent discharges, the edges are reverted and red, with the surface dry, you may be assured your patient will not recover; for these indications, like those of the tongue, only being more certain, are evidences that the nutritive function is arrested, and life cannot long continue when that function is impaired to a great extent, Such, then, is a sketch of the more frequent form of the disease.

The next variety gets a similar name—delirium tremens—but we should carefully mark the distinctions between this and the first described variety, or a fatal mistake may be made. And here I should observe, that it is the fact of thus erroneously describing under one name varieties in this disease, which has given rise to such a contrariety of opinions respecting the mode of treatment, &c., proper to be adopted in it. Dr. Lendrick, a man of great observation, first showed that the ordinary treatment, as opium and stimulants, would not do here, and that bleeding should be had recourse to. I believe, then, that two very different conditions of disease have been confounded under the same name; so you are not always to suppose, when you have got hold of a name, that you have by any means got hold of the disease.

The case I am now about to describe may be called sthenic delirium tremens. A man has been drinking for two, three, or four days, and is in a condition very different from the person who has been a long time accustomed to stimulants; there is in this man a state of irritation of the brain and nervous system only in a very trifling degree removed from actual phrenitis, and were you to give opium in such a case, it would act not as a sedative but as a continued stimulant, and you would thus be keeping up the diseased condition into which the patient had plunged himself. Remember, then, that this is a mild case, there being a certain amount of irritation, but a strong approach to positive inflammation. Gastritis is a common accompaniment of this form of delirium tremens, at least a state, like that of the brain, of approaching inflammation of the stomach, marked, as I have said, by some symptoms of nervous irritation, but nothing like the collapse of the former case. During the period of a general election cases of the sthenic kind are frequently met with; for instance, a man of previous abstemious habits spends two or three successive nights drinking ardent spirits, and presents himself with the symptoms I have sketched for you.

In this, the sthenic form of the disease, then, do not give opium; apply leeches to the epigastrium, and to the head, as also cold lotions; these, with rest, and small doses of mercury are your chief remedies. When you have to some extent allayed the irritation, you may then make a slight approach to the treatment adapted to the first case, but do not commence by stimulating. Recollect that a compound form of the disease presents itself in this case.

We now come to the third division of the disease, a form of it in which very little active treatment is necessary; and I may tell you that the skill of the medical man is often most seen in his abstaining entirely from any decided treatment; good practice consists in that as much as in anything else. You must not entirely refrain, however, from giving medicine, if it were merely for the purpose of keeping in view the advantage of the impression on your patient's mind that you are making some exertion for him: and this is a point deserving your attention, for were your patient even a medical man, it would be necessary to act on this principle.

A man presents himself, who has been at one time temperate, at another drinking perhaps for two or three days, and is now labouring under more or less irritation of the brain, manifested by slight attacks of delirium, and want of sleep, forming, in fact, a link between the condition already described as sthenic delirium tremens and the state of collapse. The subject of a case like this gets repeated attacks of a trifling kind; he may be, as I have just said, at one time temperate, at another—perhaps in travelling and stopping at different hotels—drinking three, four, or half-a-dozen days, and at length falls into a state constituting our third division: he is capable of exertion, understands what you say to him, and will speak collectively, but when left to himself, fancies strange sights hovering about him. He is neither, as I have said, in the state of

the collapse of the asthenic form, nor does he betray the symptoms of cerebral derangement observed in the sthenic variety of the disease, but there is danger of the affection assuming the perfect form from the too frequent recurrence of these slight attacks of mental aberration. The patient takes little or no nourishment. This variety of the disease, then, forms as it were the centre of the balance—but let nature have the management of it; leeching will not be borne, from the previous habits of the patient, and if opium be given, so as to be followed by dryness of the tongue, great mischief is done; so do as little as possible. Give the patient as much cold air as you can, at the same time keeping his room rather dark. You may either give him ice, or a very cool saline mixture, or cold chicken tea If restlessness should still persist, you may give small doses of opium, but much of the after treatment had better be left to nature. The three divisions which I have sketched, you will find worth recollecting; they are such, as in an ordinary exercise of observation, in practice must force themselves upon you.

Medical Times, Feb. 28, 1846, *p.* 428.

12.—*Intermittent Character of certain Diseases of the Nervous System.*—By Dr. Schoenlein.—The tendency to intermittence of the symptoms, in various lesions of the cerebro-spinal system, is a circumstance that ought to be well known to medical practitioners; as they might readily fall into a serious error in their diagnosis, if they were not aware of it. In the acute hydrocephalus of children, the symptoms in the early stage of the disease very usually exhibit more or less of intermittence. I have repeatedly noticed this circumstance in the genuine disease—not to mention that form of fever which has been called *intermittens maligna cerebralis*, and which has been so often mistaken for it. In the after-part of the day, the symptoms of cerebral irritation usually come on, and continue till about midnight; then they gradually subside, and the child appears to be almost quite well, so that its parents may probably suppose that it was nothing but a casual illness. Again, however, in the afternoon, the child becomes feverish and uneasy; and the same aggravation and subsidence of the symptoms occur as on the preceding day. This state of things will, if unchecked, continue until the pyrexia and head-distress become permanent. When such is the case, mischief has already fairly commenced, and will perhaps utterly defy the best directed efforts of the most experienced physician. In inflammatory affections of the spinal marrow also, this intermittence of symptoms is not unfrequently observed in the early stages of the morbid action.

Medico-Chirurgical Review, Jan. 1846, *p.* 187.

13.—*On the Cause and Treatment of Stammering.*—By Jno Bishop, Esq., F.R.S., Surgeon to the Northern Dispensary, &c.—The different operations which have been practised for the cure of

stammering, have generally failed to remove the defect. This is not to be wondered at, since by careful observation, we soon discover that the disease is often of a functional character, and consequently cannot be cured by those surgical mutilations which have of late been practised. Mr. Bishop observes,]

It has been truly remarked by Sir Charles Bell that the consent of a great number of organs is necessary for the production of the most simple sound, or the articulation of a single word. Dr. Arnott also observes that command over the organs of speech is required in the same manner as over all the muscular organs of the body; as for example, in walking, skating, fencing, and performing on musical instruments. Agreeably to this view, it will be found, on analysis, that want of synchronous action of each part of the vocal mechanism concerned in speech is essentially and fundamentally the cause of stammering. The most common species of stuttering is an attempt to articulate before the vocal ligaments are brought into vibratory action, and the breath vocalized; and, therefore, in order to remove this kind of imperfection, we have nothing more to do than to instruct the patient in the art and method of using the vocal apparatus properly. To effect this purpose, it is necessary to call upon the patient to vocalize the breath so as to utter a continuous sound, as by singing a note in music. This he should first do without making any attempt to articulate a syllable; and then, on repeating the same sound, should endeavour to articulate the word required. This he will be enabled to do immediately if, during the whole time that the attempt is made to pronounce the articulate sounds, care be taken that the glottis is kept in action by the vocalization of the air issuing from the lungs. In this manner the worst kind of stammerers will be enabled to overcome, on the first trial, the difficulty of articulating at will.

On careful investigation, it will be found that the interruptions of vocalized breath in stammering may take place by the irregular actions of four different sets of organs:—1st, by the closing of the valve of the glottis; 2ndly, by the closing of the isthmus of the fauces; 3rdly, by the tip of the tongue being brought into contact with the palate; 4thly, by the closing of the lips. In the first case, the air is alternately rarefied and condensed in the trachea; in the second, the same effect takes place in the vocal tube, posteriorly to the isthmus of the fauces. When the glottis is involuntarily closed during speech, the articulation of all the vocal sounds is affected. The closing of the isthmus of the fauces necessarily affects, not only those letters and syllables where it ought to remain open, but its irregular action will also cause an involuntary movement, on attempting to pronounce the words beginning with the gutturals *k*, *g*, &c. The involuntary or misdirected action of the tip of the tongue affects the dentals and palatals, such as *l*, *n*, *t*, and therefore words containing or beginning with those letters. That of the lips not only affect the labials, but may likewise impair the pronunciation of all the other letters. The ear of any experienced person may easily detect, without ocular inspection, whether it is the valve

of the glottis, or the aperture of the isthmus of the fauces, which is instrumental in producing the interruption, by observing the manner in which the breath is suppressed, and suffered to escape. The same observation will enable him to discriminate the effect produced, when the sounding column of air is stopped by the tip of the tongue. When the lips are the cause of the interruption, we have ocular demonstration to assist us in distinguishing the organs which are instrumental in causing the defect. The mode of relief, however, for all these kinds of stammering is nearly the same, the principle above proposed applying to them all.

The involuntary actions of the voluntary muscles which close the vocal tube may be occasioned, either by momentary nervous excitement, or by peculiar states of the nervous system analogous to those which occur in chorea. In these cases the malady occurs only at intervals, greater or less; and the treatment consists in establishing a healthy nervous control over the vocal organs. The most frequent cause of stammering arises from the imperfect education or training of the organs of articulation, and from a deficiency of that sympathetic association which ought to subsist between the articulating and vocalizing organs. The various and complex modifications of the organs of articulation are required only by long and attentive observation, the healthy action of the ear being fundamentally necessary for this purpose; and even although its functions may be healthy, experience often proves how difficult it is for some persons to imitate the isochronous pitch of the most simple sound, which indeed many can never accomplish.

In like manner, when a person whose articulation is perfect hears a strange word pronounced, as for example a word in a foreign language, he is often obliged to make many attempts before he can repeat it. In the Turkish, Arabic, and Russian languages, words might be selected which few if any Englishmen could imitate without long and continued practice. Is it not therefore reasonable to expect that stammering persons, whose organs of articulation have been for many years imperfectly or improperly applied, will require similar efforts to overcome the defect, even after they have been properly instructed how to do so? The configurations of the mouth and pharynx in speech being numerous and complex, the slight changes which modify the sound cannot be explained to the stammerer: his ear must catch all the modifications of sound which constitute articulate language; but it is only by the regulated exercise of the organs of articulation that he can expect to be able to imitate them; and it is owing to the imperfect manner in which this has been performed that stammering in the greater number of cases arises. No person can stammer whilst a continued sound is maintained, for in so doing the valves of the vocal tube must necessarily be open. To prevent stammering, the greatest care must therefore be taken that they do not close upon the vocalized breath.

Transactions of the Med. Society of London, New Series, Vol. 1, p. 25.

14.—*Cure of Stammering.*—By Dr. Serre.—[At a meeting of the Academy of Sciences, in February, this year, the paper read by Dr. Serre on the cure of stammering, was attended with particular interest, from the fact that he himself has had to contend against this infirmity from his youth. His distinct utterance and unhesitating manner were practical illustrations of the correctness of his views of the treatment of this affection.]

The following precepts are laid down by Dr. Serre :—1, Stammering, like other defects of speech, can only be got rid of by a firm and persevering determination. 2. Equisyllabism, or the enunciation at equal intervals of each syllable of every word, is the first rule to which the stammerer must submit; under its influence regularity takes forcibly the place of that disorder which characterises his utterance. 3. The action of the orator not only constitutes a language completive of vocal expression, but serves also, according to Dr. Serre, to modulate the sound emitted, the volume and energy of which is instinctively regulated by the precision of the accompanying gesture. 4. The frequent exercise of equisyllabic pronunciation combined with appropriate action must infallibly restore the function of speech to its natural conditions. Stammering is certainly so often the result of bashfulness, that the rules laid down by Dr. Serre cannot fail to produce a favourable change in most persons afflicted with the infirmity. It is obvious that they must, on the contrary, prove inefficient when some physical obstacle exists to a proper enunciation. Such instances are, however, comparatively rare, and to all others, Dr. Serre's method is immediately applicable.

Medical Times, Feb. 14, 1846, *p.* 383

15.—*On the Causes and Treatment of Aphonia.*—By Jno. Bishop, Esq., F.R.S.—[A cold or moist atmosphere very frequently induces this affection in weak and relaxed habits of body, particularly in females. Other causes, as well as humidity, may bring it on, as over-exertion of the vocal organs, nervous excitement, &c. Mr. Bishop observes,]

No sooner is the surface of these membranes exposed to sudden changes of temperature and moisture, than they begin to secrete the fluid peculiar to them. This secretion tends to clog the vibrating surfaces in contact with the larynx, and often impedes the action of the thyro-arytenoid ligaments. The voice sinks in pitch if the relaxation is only partial, as does a reed by partially moistening the membranous tube in which it is placed. When the mucous membranes which line the vocal tube have received such a shock as to induce inflammatory action, the train of symptoms is altogether different, and cough and irritation supervene. In this case the voice is not extinguished, and the complaint requires a very different kind of treatment. It is not, however, proposed to include this condition, which is of an inflammatory character, in our present inquiry. The degree of mischief produced on the mem-

brane often decreases, in proportion as the distance from the respiratory apertures increases; and thus we often find that the nostrils are irritated and relaxed, without the disorder proceeding further. The fauces are next affected; and it is the derangement of these parts, in consequence of their having less mechanical support, that chiefly tends to extinguish the sounds of the glottis. The trachea is the part liable to be affected by this kind of relaxation, owing to its component tissues being chiefly of a cartilaginous structure, and to its greater distance from the origin of the mischief.

[The disease is evidently of an *asthenic character*, hence antiphlogistic treatment is contra-indicated. Stimulants and astringents are mostly to be depended upon, and Mr. Bishop recommends a strong solution of nitrate of silver, applied with a camel's-hair brush, before every other application; and he illustrates its beneficial action by the following cases in which he made use of it.]

Case 1.—Mrs. H.. a professional singer, suffered occasionally from loss of voice, which often lasted from six to eight weeks. On one occasion, she was engaged to sing at a concert in the course of a few days, when one of these attacks came on; and she was greatly alarmed at the prospect of not being able to fulfil her engagement. Under these circumstances, I applied to the fauces a solution of nitrate of silver, of the strength of ten grains to one ounce of distilled water, and repeated the application the following morning. Under this treatment the power of the voice returned, and she was enabled to sing at the concert on the third day.

Case 2.—Mrs. R., a lady, who had suffered every winter a loss of voice, was placed under the same treatment with similar results; and is now so sensible of its advantage, that she has recourse to it whenever she happens to suffer from cold, and has not lost her voice for several years past.

When aphonia arises from nervous excitement, we must look for the origin of the affection beyond the mere office of the soft parts of the vocal tube. This condition may often be traced to the nervous centre, most commonly arises from an asthenic state, and is often associated with an hysterical disposition. In some hysterical cases, however, an opposite state to that of aphonia presents itself. A patient was placed under my care, who uttered a constant involuntary bark, like that of a dog, very loud and discordant. It need scarcely be mentioned that no benefit can be expected to result. in such a case, from merely local treatment. Sudden alarm and over excitement will often cause aphonia. When this is produced by an altered state of the nervous functions, galvanism is said to be beneficial. A case of this description is recorded in the *Encyclographie Médicale*. A young man, having killed a comrade in a duel, became epileptic, and lost his voice from the excitement. All other treatment having failed, his medical attendants had recourse to electricity. A galvanic battery of thirty pairs of plates was employed: the zinc pole was applied to the first cervical vertebra.

and the copper pole to the side of the larynx; two hundred shocks were given the first day, and three hundred on the second, when the parts became somewhat sensible. Two days' respite was then allowed, and at the third sitting the patient received three hundred shocks from seventy pairs of plates. On the fourth day, four hundred shocks from seventy pairs were administered; and after the latter application the patient began to utter a feeble cry. Six days were then allowed to elapse, after which three hundred shocks were given with a pile of thirty pairs of plates. The treatment was continued a few days longer, and at the last four sittings four hundred shocks were administered through the tongue; the zinc pole being applied to the first cervical vertebra, and the copper pole under the tongue. By means of this treatment the voice gradually returned to its natural state, and at the end of twelve operations he was discharged convalescent. In another case aphonia resulted from sudden surprise, and over-exertion. The patient was a tradesman in St. Martin's lane, who was standing in his shop, when an impudent thief entered, very coolly took up some article before his face, and bolted away. The tradesman ran to the door, crying "stop thief!" as loud as he could vociferate, and was about to repeat the same exclamation, when he suddenly found himself unable to do so. The larynx was rendered mute, and remained incapable of uttering a vocal sound for the space of eight months, when the voice returned unimpaired.

Transactions of Med Society of London, New Series, vol. 1, p. 32.

16.—*On the Prevention and Treatment of Apoplexy.*—By Marshall Hall, Esq., M.D., F.R.S., &c.—[There are few diseases, the pathological diagnosis of which is of more consequence than apoplexy; the different kinds of this affection requiring diametrically opposite modes of treatment,—sometimes an antiphlogistic, and at other times a stimulating kind of management. In speaking of the *causes* of apoplexy, and its usual effect, Dr. M. Hall first mentions *mental emotion*, and illustrates it by the following cases:—]

A lady parted with her son, on his appointment to India; she became afflicted with apoplectic symptoms, and most complete hemiplegia. Another lady watched a daughter in a dangerous illness; she was seized with hemiplegia of the arm. A gentleman, under the immediate influence of painful tidings in reference to property, was seized with ptosis, paralysis of the rectus externus, and immobility of the pupil of one eye.

[*Muscular effort* is next mentioned as one of the causes of cerebral seizure, also a *morbid condition of the stomach*,—and in illustration of the latter, Dr. M. Hall observes]

A short time ago, I was requested to see a young man, who, after eating heartily of pork at supper, had gone to bed, and risen the following morning free from ailment, but suddenly lost the mental

powers, the power of articulation, and the use of the arm and leg. It was a case of severe hemiplegia. In many cases, the effect follows the exciting cause more speedily: in this instance, the hemiplegic seizure occurred soon after rising.

[A constipated and loaded state of the *large intestine* is also to be classed among the exciting causes—of the predisposing causes Dr. M. Hall classes *hyperæmia*, or a state of plethora, as the first; but it may also be caused by just the opposite of this, viz. *anæmia*, or more correctly *hypoæmia;* in speaking of this state of the system as a cause of apoplexy, he observes]

A lady who was a patient of the late Dr. Denman was absolutely blanched by the hemorrhage proceeding from a polypus uteri of an intractable character: in the midst of this anæmia she suffered from an attack of apoplexy and hemiplegia, which terminated fatally; and on a post-mortem examination, it was found that laceration had taken place in one of the hemispheres of the brain, with the effusion of blood! A patient of Mr. Hammond, of Brixton, had severe uterine hemorrhage during parturition, succeeded by hemiplegia. A lady drained by intestinal hemorrhage has greatly lost the use of the left arm and leg.

It is plain, as I observed many years ago, that a state of general anæmia does not protect the patient from local congestion of the brain.

Other conditions of the blood, not merely of hyperæmia or of hypoæmia, but of *cacoæmia*, result from defective secretions and excretions from that fluid. Defective arterialization of the blood by respiration; the presence of bile in the blood in diseases of the liver,—are of this character. But of all the secretions, the inefficient or abnormal separation of which from the blood induces the most marked predisposition to the apoplectic seizure, that of the *urine* is the most momentous.

In diabetes, in albuminuria, the patient frequently passes suddenly into the apoplectic state. In other affections of the urine, there are other scarcely less formidable tendencies to cerebral disease.

And if the blood may be in an abnormal condition for want of the processes of purification, it is also subject to be unhealthy in those cases in which the supplies are not healthy. Such are those states of defective and abnormal digestion and assimilation which occur in *dyspepsia*, with its effects, *gout*, *furunculus*, *carbuncle*, and urinary deposits, and other affections, &c. In all these cases there is danger of apoplexy and paralysis from *cacoæmia*.

[On the preventive treatment. Dr. Hall remarks,]

The real principle of prevention of the apoplectic or paralytic seizure, is that of inducing a state of *equilibrium*, in regard to plethora or inanition; and of *health*, in regard to the general tone, habit, and secretions.

[With respect to actual treatment, we must pay especial regard to the cause of the malady;—under this head Dr. M. Hall observes]

Besides that of the condition of the general system, the questions, —whether the cerebral affection be one of intravascular congestion or extravascular effusion,—whether the substance of the brain be compressed or lacerated,—is of the utmost moment. In the former case, there is great tolerance of loss of blood, and the detraction of much blood is requisite; in the latter, blood-letting is neither well borne nor required: the system is under the influence of shock, and much cautious watching and treatment are requisite.

When there is plethora or hyperæmia as the cause of the threatening of an attack of apoplexy or paralysis, the remedy, the safety of the patient, consist in—depletion.

How are we to be certain of the fact? There may be the appearance of the sanguineous temperament in the countenance, an athletic form, the general appearance of too rude health; and with all this, head-ache, vertigo, and other symptoms of head affection. But is it certain that the symptoms in such a case depend upon fulness? If there be, in addition to the appearances and symptoms which I have enumerated, a disposition to *doze*, it is nearly so. But, in the absence of such symptom, or even with such symptom, may not the real case be indigestion. Certainly. Then what is to be done? How shall we determine a question so momentous to our patient?

There is a symptom of great importance, when it can be clearly ascertained to exist. It is the occurrence of vertigo—1, in the stooping, or 2, in the unusually erect position, especially when these are suddenly assumed. One patient turned giddy when he pulled on his boots: another could not bear to look up to the ceiling of the room. In both these cases the diagnosis was pretty distinct; but in another case, no such event has been noticed. What is then to be done?

There is a resource in such a case, which, in spite of a criticism in a very respectable author, I will again venture to assert, is of immense value. There is no case in which the patient, if bled from a good orifice, in the erect posture, bears to lose so much blood before syncope takes place, as that of real hyperæmia and congestion of the cerebral vessels: there is no case in which the full, not to say the lavish, detraction of blood is so urgently necessary. On the other hand, the case of vertigo, and other symptoms of cerebral affection arising from dyspepsia, neither bears the loss of much blood, taken under similar circumstances of posture, &c., nor requires it.

In a doubtful case, I propose to adopt this mode of blood-letting; 1st, as a guard at once against the inefficient and the undue loss of blood; and 2ndly, as a *diagnosis*, and as a prompter of our ulterior proceedings.

I have adopted this measure so often, and with such satisfactory results, that I cannot recommend it too strongly to my medical brethren. In cases in which it has not been adopted, on the other hand, I have seen one class of patients become a prey to the apoplectic or paralytic attack for want of blood-letting; and another

affected with headache and vertigo, yet drained of blood by repeated cupping or leeches.

No other measure affords such security to the patient, such satisfaction to the physician.

But I now come to speak of cases in which a state of hypoæmia has already been induced. This is not a state of safety, even against the attack of apoplexy or paralysis. I constantly see patients who are in jeopardy, not from fulness, but from inanition, and who have been kept in a state of anæmia by blood-letting, general or topical, when an opposite treatment is required, to restore the equilibrium of the system, or by defective digestion and nutrition.

A state of pallor; a disposition to vertigo, faintishness, palpitation; a state of nervous timidity; the recurrence of the symptoms when the stomach is empty, when the bowels are freely moved, or on suddenly looking upwards, or resuming the upright position after stooping, or on rising from the bed or sofa;—such are the diagnostic signs of a state of inanition from a state of plethora.

The *history* of the case is, in every respect, a great aid in the diagnosis: if depletion has been used, it has been attended by this result—a temporary relief, with the subsequent aggravation of the symptoms; an opposite mode of treatment, very cautiously adopted, and prudently pursued, involving quinine and iron, confers a more permanent benefit, but less marked and immediate.

To the important distinction between the immediate but transitory relief conferred by blood-letting, and the slow but persistent relief obtained from quinine and iron, &c., both being observed very closely, I would especially beg to draw the attention of the profession. In the former case, a state allied to syncope is substituted for the previous symptoms, which return on re-action. In the latter case, a gradual induction of health, and restoration of the circulation, effectually and permanently remove the symptoms. Without this explanation of the subject, the phenomena are sufficiently puzzling.

Transactions of Med. Society of London, New Series, vol. 1, p. 184.

17.—*On Epilepsy.*—By Dr. C. J. B. Williams, F.R.S., &c.—[In a clinical lecture, Dr. Williams enters at length into the history of some important cases of epilepsy, which had been under treatment in his wards. He points out the variety of symptoms, both in kind and degree, manifested in this remarkable disease, from the transient but often repeated attack, (as evidenced in one of his cases), to that of long duration, marked by tonic or tetanic, rather than clonic spasm. He also alludes to that form of the disease, where, after consciousness has returned, there is left considerable stupor from congestion of the vessels of the brain. He here observes]

In the cases, on the other hand, of which we are now speaking, there is a sudden loss of consciousness, with sudden and violent convulsions, lasting for a longer or a shorter time, generally for a short one, and terminating almost as suddenly by a complete cessation of the involuntary motion, and a complete restoration of the natural consciousness.

[When stupor remains after the fit, the attack bears more resemblance to apoplexy than epilepsy:—the difference from apoplexy being rather in degree than kind; the oppression does not extend so far as the medulla oblongata, consequently the respiratory movements are not much interfered with. The effects of remedies substantiate the doctor's views as to the cause of this stupor, viz., congestion: yet in two of his cases the stupor was so speedily induced, and at last so quickly disappeared, that it can scarcely be accounted for on these grounds; neither did the depletory and derivant treatment avail, for the fits increased in severity and frequency. Dr. Williams asks]

What is the true nature of these fits? Of what morbid elements do they consist? In the first place there is suspension of consciousness and volition; this occurs in all the fits, slight and severe; but in the severe fits, there are added convulsions: that is, exalted function of the excitomotory system. These two elements, then, constitute the fits—suspension of the functions of the brain, and excitement of the function of the medulla.

But how can we account for this interruption to the function of one part of the nervous centres, and exaltation of that of the other? Can we give any reasonable explanation of it? I think that we can, and that in strict accordance with the whole facts of the history and treatment of these paroxysms. I would ascribe the fits to the mode in which sudden determinations of blood to the head modify the circulation through the nervous centres.

It has been observed in experiments on animals, that a certain amount of pressure on the brain causes stupor; a greater amount produces convulsions also. I have seen the same phenomena exemplified in a human subject, in whom a portion of the skull was incomplete from malformation; and the fact has been repeatedly observed in hydrocephalic patients. In these experiments, the pressure impedes or arrests the circulation through the brain, and by suspending its function causes stupor: but the current of blood being stopped from going through the brain, will go with greater force and rapidity through the cerebellum and medulla, and thus exalt their functions in an inordinate degree. The remarkable anastomosis of arteries in the circle of Willis supplies the channels for this diversion of force; and I cannot but consider this a wise provision of nature, to secure to the medulla oblongata, essential as its function is to respiration, an adequate supply of blood under varying circumstances of pressure or altered circulation.

And are not the respiratory movements increased in the epileptic fit? Most certainly they are; and so far from apnœa being the

cause of insensibility in this fit, as Dr. Marshall Hall supposes, it is a mere occasional and accidental matter, an epiphenomenon, caused by spasm of the glottis, which is sometimes mixed up with the other spasms. Nay, I will go so far as to say that the increased energy of the involuntary respiratory movements is a great mark by which we may distinguish epilepsy from apoplexy, the worst forms of which essentially impair them. You will stare when I tell you that I have seen more than one patient in an apoplectic fit struggling for breath by *voluntary* effort! The involuntary powers of respiration have been impaired, and the powers of sensation and volition have not been totally abolished, so that the patient feels the want of breath and struggles for it. In these cases there has been hæmorrhage in the tuber annulare or medulla oblongata.

In epileptic and hysterical convulsions the functions of the medulla are excited, whilst those of the brain are in abeyance; and it is because among those of the medulla that of respiration is well maintained, that the insensibility of an epileptic paroxysm, however long, is not dangerous to life, as the coma of apoplexy. Has the idea never crossed you that there is a small degree of the same thing occurring in ordinary sleep? I have long suspected that sleep is dependent on a diminution of the circulation through the brain, and a corresponding increase through the medulla: the sensorial functions are more or less suspended: the medullary functions are exalted. Hence the contraction of the pupil. Hence the sufficiency of the involuntary movements for respiration, now the sole means. Hence the greater liability to the occurrence of spasmodic and convulsive attacks during sleep, as instanced in the girl Coupees. Hence the superior hypnotic influence of moderate doses of opium, which exalt the medullary function at the same time that they impair the cerebral. Hence, too, the wakefulness often caused by hydrocyanic acid, which remarkably impairs the functions of the same medulla. But I want further and more direct proofs, before I can confidently broach the theory of sleep.

Admitting the notion that fits of epilepsy and convulsive hysteria are due to a diversion of the circulation from the brain to the medulla, we see an explanation why they begin and cease so suddenly. Anyone who has watched the circulation through a frog's web must have perceived that if one of the anastomosing vessels becomes obstructed by any cause, the current takes a circuit the other way as freely as if there were nothing to obstruct it; but by and by, when this obstruction, be it artificial, or otherwise, is removed, then the current suddenly goes back altogether, and restores the part to its natural condition. So it is with the blood-vessels of the brain. When the causes, whatever they may be, which have disturbed the circulation in the nervous centres, and thrown the whole direction of the current through the spinal system at the expense of the cerebral system, are removed, the current suddenly becomes changed; it is restored, the circulation passes equally through the brain, consciousness returns, and the superfluity thrown upon the spinal cord is reduced.

But supposing this change of circulation sufficient to account for the phenomena, what facts have we to prove that such a change attends the paroxysms? One of the first is, that in all these cases, where there is a great tendency to the recurrence of these paroxysms, there are signs of derangement of the vascular system. The fits are, I believe, in almost all cases, palpably and obviously preceded by symptoms of determination of blood to the head; there is an increased pulsation of the carotids, or at the back of the head; or there is palpitation of the heart, directing increased force through the vertebral arteries. We find this illustrated by numerous cases that I have adverted to in former lectures as well as in the present. The immediate cause of a paroxysm is in general some moral or physical excitement producing violent action of the heart, particularly if the latter promotes a flow of blood to the head, such as with a stooping posture or over-prolonged exertion. Many other things might be said in corroboration of the same point. The subjects in whom these fits are apt to occur, are usually those who present in a very high degree susceptibility to derangement in the vascular system. They are subject to palpitation of the heart, to violent throbbing of the head, sometimes in the carotids, and sometimes in the back of the head, sometimes in other parts of the body, but chiefly near the heart itself. They are often anæmic subjects, in whom the blood is unequally distributed, being monopolized by the parts nearest the heart, while the extremities are comparatively bloodless and cold. But there are other instances in which similar fits occur in plethoric subjects, and in these, I believe, that congestion in the brain is a chief part.

[In persons liable to epilepsy, the blood is very irregularly distributed, and whilst the carotids beat forcibly, the blood may not be freely circulated through the nervous centres.]

This monopoly of blood has two effects. If the heart is much excited, it may set the whole blood in the nervous centres in circulation; the consequences are, sensorial excitement and delirium; and this class of symptoms nervous anæmic subjects present during the irritation of reaction or fever. But in other circumstances we find, not excitement of the sensorial function, but the reverse, stupor, while the spinal function becomes exalted to the highest degree. This is because the determination of blood to the head, strong as it is, is insufficient to set in motion the whole mass of blood in the brain; the current flows with increased force by the vertebral and posterior communicating arteries to the medulla and base of the brain—hence the convulsions; whilst the blood in the hemisphere of the brain is comparatively stagnant—hence the insensibility.

The great practical inferences from these observations are, that nervous susceptibility, as it is called, and a tendency to these hysterical or epileptic paroxysms in the severest forms of such affections, depend on irregularities of the circulation, and the great indication for the cure or prevention of these attacks is the adoption of means which shall equalize the circulation—render it as equal,

as steady, and yet as complete as possible in every part of the system—not to allow one part to monopolise the blood, but to take various means to ensure an equal distribution in every part.

The means by which we effect this will vary in different cases. The determination to the head is in some instances so strong as to threaten inflammation; or there may be signs of serious cerebral congestion: here blood-letting may be required, but the loss of balance generally takes place most in anæmic subjects, who can ill afford the loss of blood, and whose disorders arise, in a great measure, from this very cause. Hence depletion, although necessary in a few urgent cases, is generally an exceptionable remedy, and the object, in most instances, is to improve the vigour of the circulation, and increase the quantity of blood, rather than the reverse. But the leading indication is, to insure the equality of its distribution. Although we do not abstract blood, yet it is a clear indication to derive it from the head and spine, and we effect this by various means; to wit, by cold to these parts, and particularly to the back of the neck, by heat to other parts, particularly to the extremities; by purgative and diuretic medicines, by blisters, or other means of counter-irritation. These remedial measures variously combined and applied are all severally useful in such cases. We attempt the same objects more habitually by various regiminal means that keep up the cutaneous and extreme circulation; by regular, but moderate, exercise; by warm clothing of the surface and extremities; by the shower-bath, or cold sponging, followed by friction and other practices which promote a thorough distribution of blood throughout the body.

We have found that the action of the heart is often much disordered; the patient is very excitable, and subject to palpitation: this cannot occur without increasing the disorder of the circulation. Remember that the increased force of the heart does not set the circulation right; for at the time that its throbs are violent in the chest, the pulses are weak at the extremeties—here, in truth, is the cause of the fits. It is therefore an object to prevent these attacks of palpitation; this is one reason why I gave hydrocyanic acid, digitalis, henbane, and valerian; and most valuable they are. I do not know any medicines which are so successful in diminishing epileptic or hysterical convulsions; reducing its irritability, and acting as they do by tranquillizing the action of the heart, preventing those bursts of violent movement which derange instead of promoting the circulation.

Another indication will be the removal of all causes of excitement that set the heart in inordinate action—moral emotions, overexertion of any kind, any irritation of the alimentary canal, of the uterine system, of teething. Infantile convulsions come from similar causes; they cluster together as a group of the same class. Any irritation which sets the heart in violent action may bring on paroxysms. I maintain that these sudden attacks are brought on mainly through an irregular distribution of blood dependent on a violence of action or a determination of blood from some similar

cause. Teasing and irritating measures often do harm in this way. For example, one man's fits seem to have been increased by severe counterirritation; and they soon ceased under a soothing plan.

Lastly, there is a further indication to improve the tone of the whole system of blood vessels. There are some cases in which we find a beating in the carotids and subclavians, and fits ensuing as a consequence, and we cannot perceive that there is any palpitation of the heart. It is not that the heart acts more strongly, but a loss of tone takes place in the great arteries. They become unduly large, and let the current of the heart's force into them in too great a measure, causing a determination of blood. This takes place in an atonic state of the system, and is generally connected with other symptoms of loss of tone, weakness of muscles, depression of strength, liability to flushings of the face, loss of power and heat in the extremities, and so forth. It is a great indication in such cases to improve the tone of the system; and it is under this head that we may notice the operation of what are called tonic remedies. This is a very large class; some of these remedies does not appear to be stimulant at all; they seem to have very little operation besides being tonic or promoting the tonic contraction of animal fibre. Such, apparently, is the operation of nitrate of silver, sulphate of zinc, sulphate of copper, and some others. These are amongst the most useful remedies in diminishing the tendency to these paroxysms; and I suspect they effect it in the manner I have just surmised.

But there is another class of remedies still more useful, and I believe they are more useful because they promote the restoration of the natural circulation in a double mode—I mean chalybeate tonics, mineral acids, bark, quinine, &c.; but none stand so high as the preparations of iron. They improve the tone of the blood-vessels, and operate as astringents. None is so useful under such circumstances as the tincture of muriate of iron. In other cases the other forms of iron may be preferred, but in these cases, where there is palpitation of the heart and failure of circulation, the muriated tincture of iron is the best I know. And there is another operation beside that of increasing the tone of the animal fibre, namely, the restoration of the proper quality and quantity of the blood; and by effecting this the inequalities of circulation are also reduced. I have stated in the present lecture that these inequalities are usually connected with anæmia. In proportion as that is removed, so the vessels are better filled with blood of a better quality—more abundant in red particles, and in proportion as it is better circulated to the extremities, less expended on parts near the heart itself, in that proportion will the tendency to these fits or other evil results connected with irregular circulation diminish. Hence we find that although by hydrocyanic acid, digitalis, and other means of tranquilizing the circulation, in the first instance we can best prevent a recurrence of these paroxysms, yet we produce a permanent cure best by the tonic class of remedies. They improve the tone of the body, the condition of the general circulation, and render the heart's action more effectual for this purpose.

Medical Gazette, Nov. 21, 1845, *p.* 1270.

18.—*The True Spinal System.*—By MARSHALL HALL, M.D., F.R.S., &c.—[In the *Lancet*, Dec. 6, 1845, is a note from Dr. M. Hall, to point out what he really claims in regard to the advancement of our knowledge of the nervous system; and particularly in order to correct misapprehensions, liable to arise from some recent observations of Dr. Copland, he gives the following arrangement:—]

THE TRUE SPINAL SYSTEM COMPRISES FIVE POINTS:

1. Its Principle: viz., the vis nervosa,—especially in its newly-discovered reflex course of action;
2. Its Anatomy, viz.—
   1. The True Spinal Marrow, with its
   2. Class of associated { 1. Incident, and / 2. Reflex, nerves;
3. Its Physiology, viz.—
   1. The Reflex Function, in
   2. The whole Class of the Acts, { 1. Of Ingestion, and / 2. Of Egestion; and especially / 3. Of Respiration; / 4. Of Parturition;
4. Its Pathology: viz.—
   1. The Reflex, and
   2. The Centric, actions, in
   3. The whole class of Spasmodic diseases.
5. Its Therapeutics: viz.—
   1. The Nervous and Reflex, and
   2. The Vascular or Centric, modes of action of
   3. A whole class of { 1. The causes, and / 2. The remedies. } of disease.

Lancet, Dec. 6, 1845, p. 627.

19.—*On the Employment of Magnetic Electricity in certain Forms of Paralysis.*—By J. M. NELIGAN, M.D., &c. &c.—[One of the principal reasons why electricity and galvanism have fallen into disuse has been the difficulty of their application, in consequence of the large and inconvenient size of the apparatus; but now that such great improvements have been effected in the construction of magnetico-electrical machines, this objection is removed; yet it is to be feared that its too indiscriminate employment may bring it into disrepute.

In the following cases, Dr. Neligan has confined its use to certain forms of paralysis, in which there appeared no organic lesion, but merely a want of nervous energy. He thus describes the apparatus used on these occasions:]

The instrument which I have employed is that which consists of a small battery, in connection with a frame, on which is fixed an upright straight magnet, surrounded with a bundle of iron wires,

round which are coiled some thousand yards of insulated large and small copper wire, divided into seven different portions, each of which terminates separately in a small brass nob, brought up through the bottom of the frame. The shocks are produced by the continuity of the stream of electricity being broken, by the alternate attraction and repulsion, by the magnet of a piece of soft iron, which is kept in contact with a platinized screw, by means of a piece of watch spring.

This instrument possesses many advantages, from its portability, the great readiness with which it may be applied, and the facility with which the shock may be regulated; the latter being effected by taking in one or more additional coils of wire, which is done simply by moving a brass regulator attached to the frame to the different nobs, in which, as it is said above, the coils of insulated wire terminate. The profession in Dublin are supplied by Mr. Robinson, of 65, Grafton-street, the cost of the instrument being from £3 10s. to £4 4s..

The form of paralysis in which I have found magnetic-electricity prove most useful, is when a single muscle, or a certain class of muscles, have become paralyzed from any special or local cause. Thus, I have derived peculiar benefit from its use in that particular form of paralysis of the muscles of the fore-arm, which is produced by the action of lead, and which is so frequent a sequence of painter's colic; as also in those cases where a single muscle becomes paralyzed, either from exposure to a draught of cold air, or from continued pressure on the nerve by which the muscle is supplied. In the treatment of hemiplegia or paraplegia, even in their chronic stage, when, of course, the use of any plan of stimulant treatment could alone be had recourse to, I have not seen any benefit produced by the use of electricity; nor, indeed, in any instance where the cause of the disease could be traced to the brain or spinal marrow.

In short, I believe that electricity must be looked upon as a remediable agent applicable to *local* and not to *general* paralysis.

[The first case was that of a girl nine years of age, who had paralysis of right sterno-mastoid muscle, resulting from inflammation of the cervical fascia. This took place in Nov. 1843; the result was wryneck: the right sterno-mastoid was paralysed, and the left having nothing to antagonize, it assumed a state of spastic rigidity producing this deformity. The treatment at first was small doses of saccharated carbonate of iron, with the view of improving the general health, and afterwards to make use of magnetic electricity. In three weeks time, he says]

I commenced the use of the electro-magnetic machine with the child, by applying the conductors of the instrument in which pieces of sponge, moistened with salt and water, were fastened, one to the origin, and the other to the insertion of the right sterno-mastoid muscle. The application was at first continued for only a quarter of an hour, but was gradually prolonged until she could

bear it for half an hour at a time, which period I never exceeded. The weakest power of the instrument was used, and it was applied only twice a-week. After the third or fourth application, a decided amendment was visible; the sternal end of the muscle being the first to regain its power, as was evident from its becoming fuller, and contracting more strongly under the shocks. The head gradually assumed its natural position, and was perfectly straight on the 20th of May, at which time, also, not the least difference in the development of the muscle of either side could be perceived.

In this case, the result of subsequent experience leads me to believe, that the cure would have been much accelerated had the electrical shocks been more frequently applied; but as it was the first case in which I employed the electro-magnetic machine, I was cautious in its application.

The second case in which Dr. Neligan tried it, was one of painter's colic, succeeded by almost complete palsy of the muscles of both fore-arms. After the colicky pains were removed and the bowels opened, he was subjected to the influence of magnetic-electricity: though previously he could not stir his hands, they immediately closed on the conductor. The application was continued for half an hour at a time, and in four weeks he was quite cured.

The next was a case of paralysis of the right shoulder, from the effects of damp. He was a sailor, and had slept for nights together in wet clothes on deck: his right arm at first began to feel heavy and numb; it pained him to stir it; and he gradually lost all power over it. Blisters and moxas had been applied without any benefit. Electro-galvanism was at length made use of by Dr. Neligan, on the 20th of December, and by the 30th he could use his arm nearly as well as ever. Dr. Neligan adds]

From what I have already said, I need scarcely add, that I have employed magnetic-electricity in a great number of cases of hemiplegia and paraplegia, in their chronic stage; but my experience leads me to place little reliance on its application in such cases. Indeed, so far from proving beneficial, I have seen it, in some apoplectic individuals, prove absolutely injurious by its effects in hurrying the circulation.

If the above short observations and cases lead to a more correct appreciation of a useful therapeutic agent—hitherto too much overlooked by the regular practitioner—my object in making them public will be completely answered.

Monthly Journal of Medical Science, April, 1846, *p.* 225.

20.—*Strychnine in Paralysis.*—By Dr. Favell, Sheffield.—[At a meeting of the Sheffield Medical Society in Nov. last, Dr. Favell read a paper on the efficacy of strychnine in certain cases of paralysis which had occurred in his practice; in most of them it was of long standing, and in none very recent,]

The dose in which the medicine was given at the commencement of the treatment, varied from the one-eighth to a quarter of a grain, and it was afterwards carefully increased. He had never given a larger dose, however, than three-quarters of a grain three times a-day. Dr. Favell also related the case of a child, aged twenty-two months, suffering from paralysis of the lower extremities, in which he had administered strychnine successfully. In this case he began with the one-sixteenth of a grain three times a day. He afterwards proceeded to notice some of the formidable consequences which occasionally result from the administration of strychnine. Amongst others, he related the following particulars of the case of a woman, aged 69, who had been taking strychnine for twelve days. She began by taking one-sixth of a grain twice a-day, and the dose was afterwards increased to a fourth. Three days after having commenced the larger dose, she was seized one morning, shortly after having taken her medicine, with the following symptoms : the surface of the body was bathed in perspiration; pulse 160, small and feeble; pupils imperfectly susceptible to light; articulation exceedingly indistinct; breathing laborious, almost stertorous; the paralyzed hand very hot, the other less so; great anxiety and distress.

After a number of observations, the author read the following corollaries, which he thought were abundantly established by the particulars he had given:—

1st. That strychnine is efficacious in relieving certain forms of paralysis.

2nd. That the peripheries of both motor and sensitive nerves are affected by strychnine, but that the former are influenced more powerfully than the latter.

3rd. That, although strychnine appears to act most powerfully on the nerves of the paralysed part, those supplying other parts are also affected by it.

4th. That strychnine sometimes produces dangerous symptoms, and therefore its effects ought to be carefully watched.

Dr. Favell contended that the forms of paralysis most likely to be benefited by the administration of the medicine, are those depending on cold, poisons, and certain molecular changes in the brain and nerves, altogether inappreciable by *post mortem* examination; and he also maintained that the most dangerous symptoms which result from an overdose are generally caused by the influence of the drug on the nerves supplying the heart.

Provincial Medical and Surgical Journal, Dec. 31, 1845, *p.* 761.

21.—*Treatment of Paralysis* (*from arsenic*) *by "Firing."*—By Dr. Corrigan.—[William Murphy, æt. 26, was admitted into hospital on the 7th of December, 1845, labouring under paralysis of the upper and lower extremities. He attributed the attack to having taken a dose of arsenic by mistake for flour;—his limbs could not support the weight of his body.]

Five grains of blue pill were given three times a day, until the 13th, when the mouth became sore.

17th. No improvement; the firing iron was applied along the spine and over the thighs and legs.

20th. He has regained considerable power over the arms, but not over the lower limbs.

The firing is applied every day along the spine, thighs, and legs.

24th. He is now able to walk; firing to be continued daily; one-sixteenth grain of strychnine ter in die.

January 5th, 1846. Limbs rapidly regaining their strength. On the 8th instant, all treatment was discontinued. He was retained in hospital until the 23rd instant, lest any relapse should occur. He occasionally calls at the hospital, and is, at the date of this report, February 25th, in the possession of perfect health and strength.

[Dr. Corrigan, in making some clinical remarks on this case, said,]

I wish now to point out the mode of using this application, and the reason for giving it a preference over other counter irritants. The iron used is very portable, consisting of a thick iron wire shank, of about two inches long, inserted in a small wooden handle, having on its extremity, which is slightly curved, a disc or button of iron, a quarter of an inch thick, and half an inch in diameter, the whole instrument being only six inches in length. The face of the disc for application is quite flat. This, trifling as it may seem, must be attended to. In the French cauterizing irons, as they are sold by the cutlers, the buttons for cauterizing are spherical, and the consequence is, that they must be either pressed long and deeply into the skin, to bring them in contact with an extent of surface equal to their diameter, or they can be made only to touch at a single point. Another objection to the French iron, is the great length of its iron handle. This is necessary in the French instrument, as the iron is intended for being heated in the fire, but it terrifies the patient; whereas this little instrument will hardly attract attention. The only other portion of apparatus required, is a small brass spirit-lamp, so small that it can be carried in the waistcoat pocket. Mr. Milliken, of Grafton-street, made the apparatus for me. To use the instrument, it is only necessary to light the lamp, and hold the button of the instrument over the flame, keeping the forefinger of the hand holding the instrument at the distance of half an inch from the button. As soon as the finger feels uncomfortably hot the instrument is ready for use, and the time required for heating it to this degree, is only about a quarter of a minute. It is applied as quickly as possible, the skin being tipped successively at intervals of half an inch over the whole affected part, as lightly and rapidly as possible, always taking care to bring the flat surface of the disc fairly in contact with the skin. In this way the process of firing a whole limb, or the loins, making about 100 applications, does not occupy a minute, and the one heating by the lamp

suffices. You can ascertain at once whether the heat be sufficient. If you look sideways at the spots as you touch them, you will observe that each spot the iron has touched, immediately becomes of a glistening white, much whiter than the surrounding skin. In the course of a quarter of an hour, or sometimes of a very few minutes, the whole skin becomes of a bright red, and the patient feels a glow of heat over the part. The iron, I need hardly observe, is never rendered red hot. It is, indeed, very little hotter than boiling water, and I never made an eschar with it, and very rarely indeed raise a blister. There are merely seen upon the skin next day, a number of circular red marks, the cuticle not even being raised, and the surface being ready, if required, to receive a fresh application, and what is of no trifling consequence, where such an extent of counter irritation has been used, there being no discharging surface to interfere with the motion of the limb, or the comforts of the patient. Indeed, in most cases, the patient is quite unconscious of what has been done. Even in the case of a medical friend of mine with whom I used it, he could not even guess what the application was; he merely knew that a not disagreeable smarting or heating sensation was suddenly produced, but could not say how until I showed him the instrument. This you will at once see is a considerable improvement on the actual cautery, whether as regards the horror of the patient on seeing a red hot iron drawn out of the fire, or the deep ulcer produced by its application. The thickness of the disc or button of the instrument is not a matter of indifference. If it be thinner than the measure I have given, it will cool too rapidly; if it be thicker, it will take too long a time in heating. Of the little pain produced by its application, you can form an estimate, when I tell you that some of our resident clinical clerks here have preferred it in their own cases, when suffering under local muscular rheumatism, to any other method of counter-irritation, as being the least troublesome, the most rapid, the least painful, and the most effectual. I can certainly recommend its application in the way here directed, as one of the most useful of our counter irritants; it can be applied so rapidly, so extensively, and, as I have already said, without even the patient knowing very often what has been done. Its superiority over blisters may also be owing to the suddenness of impression produced. The effect is often as instantaneous as the application. My friend Dr. Mitchell, master of the Victoria Lying-in Hospital, consulted me some months since for a severe attack of lumbago. I applied the firing, and he was in one minute quite free from pain. He has since used it himself extensively in practice, and, I believe, he will shortly publish the result of his observations.

A gentleman, in leaping from a railway carriage, strained the muscles of his loins. He used for two or three days liniments, and took a warm bath. He continued to suffer so much that he at length called on me. He could not sit down on a chair without much inconvenience, but to rise was a labour of great torture. While conversing with him, and drawing off his attention, I heated the iron and fired him over the loins. He was instantly well.

In another case a gentleman from riding a hard pulling horse, began a year since to feel numbness in the little and ring finger of the left hand. This gradually crept up along the ulna, to the elbow, and at length there was such loss of muscular power, and so much numbness whenever the bridle pressed upon the fingers of the left hand, that he became very nervous about riding. I fired him along the forearm inside and outside from the elbow to the hand. He has felt no inconvenience since, and a period of a month has elapsed. In sciatica I consider this mode of firing a most valuable aid in our treatment. It, may, however, require several applications before permanent relief is obtained. I have also used it with the greatest advantage in cases of neuralgia of the fifth pair of nerves, and in paralysis of the portio-dura of the seventh. Even delicate females will not object to its frequent repetition when required.

Dublin Hospital Gazette, March, 1846, *p* 209.

22.—*On Idiopathic Tetanus.*—By J. Watson, M.D., Senior Physician to the Glasgow Royal Infirmary, &c. [In September 1845, Dr. Watson read a paper before the Medico-Chirurgical Society of Glasgow, on a case of idiopathic tetanus, which had come under his care at the infirmary. The patient, John Kelley, aged thirty years, had felt for some days unpleasant sensations, as stiffness and pain, in different parts of his body,—but on his admission to the hospital the muscles of the jaws, neck, both extremities, back, and abdomen were in a state of rigidity;—the body was curved forwards in consequence of the head and loins being drawn backwards;—every two or three minutes the pain and muscular contractions were increased, the paroxysms lasting about five or six seconds. He had not received a wound, but had been much exposed to cold and wet.]

The following treatment commenced immediately on his admission (2 o'clock, p.m.) He was cupped over the loins to twelve ounces. Had a turpentine enema; was ordered a colocynth pill containing a drop of croton oil every four hours, till free catharsis should be produced; a draught with one drachm of laudanum also, every four hours, viz., alternately with the pills; a little wine or spirits from time to time, and what nourishment he could be induced to take.

Nine p.m.—Pain of loins nearly removed since he was cupped—otherwise he is not improved. Bowels only scantily moved; the spasms remain; and since admission he has been tormented with an incessant and painful desire to micturate. The catheter was ordered; the pills continued; the turpentine enema repeated; and veratrine ointment rubbed over the muscles of the lower jaw and spine. Wishing to give a trial to the Indian hemp, (opium in the mean time seeming to be contra-indicated by the state of the bowels), the draughts were intermitted, and forty drops of the saturated tincture of the hemp ordered every second hour.

7th.—Next morning I found my patient's general health greatly worse, and the spasms and rigidity unabated. His pulse was 112, full and agitated, but not hard; skin still warm, and very moist; several stools, still scanty, their appearance was not particular; urine drawn off in fair quantity, but painful desire to micturate incessant; frequent vomiting during the night; and altogether he is in a state of extreme suffering. Ten minims of hydrocyanic acid were added to each dose of the cannabis; the purgative pills were omitted; and ice ordered to be applied over the spine.

Two p.m.—No vomiting since the morning; felt gratified by the ice; no other change.

[Dr. Watson now called his colleagues together and had a consultation, when it was decided to adopt the former treatment, with the addition of ipecacuanha and calomel, as the gastric irritation had subsided.]

In consequence, blisters were applied over the spine; two grains of opium with one of ipecacuan were ordered every second hour; ten grains of calomel in the morning, to be repeated if rejected; two drachms of laudanum per anum, unless relieved by bed-time, and a turpentine enema in the morning. The catheter to be introduced as called for, and wine and stimulants as formerly. All other remedies to be desisted from.

8th.—Gastric irritability returned, medicines and food being almost immediately rejected. The spasms and rigidity, as also the dysuria, are nearly the same; and the pulse is quick. But the opiate enema has been retained all night, and he has had occasional short sleeps. The turpentine enema, also, given in the morning, has produced a large, pretty natural stool, and he thinks himself a little easier. He seems much exhausted, however, and feels weak. The calomel and ipecacuan, with the solid opium, were laid aside, and two drachms of laudanum were ordered immediately, in four ounces of strong beef tea, as an injection, and to be repeated every six hours; a draught, with one drachm of laudanum and eight minims of hydrocyanic acid, every third hour, till easier, or narcotism induced; a purgative enema in the morning, and nourishment and stimulants as required.

9th.—Since yesterday's visit he has had no vomiting. Eight draughts have been taken, and he has also retained four anodyne enemata, each two hours on an average; notwithstanding which, large doses of laudanum and hydrocyanic acid he has not shown the slightest approach to narcotism. He has also taken 8 ounces of spirits; and nourishment in fair quantity. He has had three stools,—the last particularly dark and fetid. This was the first time any thing remarkable had been observed in the stools. Pulse 104, much calmer. General aspect more comfortable, and he expresses himself as being greatly better. Still, however, the rigidity of the body is the same; and although the spasmodic exacerbations are somewhat less frequent, they seem equally severe when they occur. Opiates were continued. Ten grains of calomel were ordered at bed time, and an ounce of castor oil in the morning.

[The symptoms now gradually abated, and Dr. Watson adds:]

With the diminished call for them, the opiates were gradually withdrawn. From the 14th February, the hydrocyanic acid was laid aside, and the laudanum reduced to one ounce daily. For ten days longer this dose was continued, after which it was diminished more rapidly. On the 8th of March he had only two grains of solid opium daily; on the 14th, only one; and on the 21st, opiates were finally laid aside. The bowels were throughout carefully attended to, and they were not particularly difficult to move. A colocynth pill, with a drop of croton-oil, and occasionally an ounce of castor-oil, and on two occasions ten grains of calomel with the aid of purgative enemata, sufficed. As to stimulants, for a few days about the time of his commencing convalescence, he took fourteen ounces of spirits daily: but his usual quantity was six or eight ounces. On the 6th of March, the spirits were changed for a pint of porter. For the last fortnight, he had quinine, steel, and the cold bath. He was dismissed cured on the 3d April. His residence in the house was fifty-six days, and the whole length of his ailment, (counting from the first deviation from health, sixty-six days); but he might be said to have been fairly convalescent from the 3rd of March, viz., the twenty-fifth day of the disease, and the fifteenth from his admission.

[Such cases as this are rare. It is the third *which has occurred in the Glasgow Infirmary since it was opened fifty years ago.**

In the treatment of this case, Dr. Watson, under the impression that the spinal cord or its coverings were inflamed, ordered local bleeding and counter-irritation. The pain in the loins was relieved, but there was no alleviation of the tetanic convulsions. This led him to infer that the affection of the nervous centres was functional and not organic, consequently care should be used lest by too active treatment the patient's strength be worn out. The character of the fæcal evacuations in relation to the spasms is interesting—whilst they were natural there was no relief of the symptoms, but when, by the use of purgatives, they became thin and offensive, Dr. Watson observes]

From the first evacuation of this kind being procured, there was a very marked alleviation of the man's sufferings,—and from the stools becoming again more natural, the spasms, both permanent and convulsive, speedily gave way. This case, therefore, is one corroborative of the opinion, that whatever else may be judged necessary for the relief of the patient, much reliance must be placed in respect of a cure on a decided and *well-sustained* course of purgatives; and this, notwithstanding the at first ordinary character of the evacuations. We all know what a difficult thing it is, in many instances, thoroughly to unload the bowels, and when this is at last effected, what a wonderful amelioration is produced in many convulsive diseases, not very dissimilar in some of their

* See a case by Dr. Newbigging, in Retrospect, vol. xi., p. 24.

characters to the present. No doubt it must be acknowledged, that this is more likely to occur in idiopathic, than traumatic tetanus, where we have another and obvious source of irritation.

Had I another similar case to treat, I do not think I should be so urgent in regard of stimulants; but would content myself with endeavouring to support the patient's strength by less exciting and doubtful means, such as animal jellies, &c., which, as the issue of this case proved, were abundantly sufficient for that end, at least with very slight aid from stimulants.

[The use of opium in tetanus is of the greatest importance; it not only, as in this case, relieves the excruciating pain,—but it keeps the patient alive until other remedies, as purgatives, &c., can be introduced.]

Monthly Journal of Medical Science, Dec, 1846, *p.* 902.

23.—*A Case of Tetanus successfully Treated.*—By W. S. Preshaw, Esq., St. Helier's, Jersey.—[The patient, a boy, 11 years of age, complained of a slight stiffness in the neck, and had pain and difficulty in moving the head and legs: he said he had sustained no injury. He was purged, ordered into a warm bath, and to take an antispasmodic mixture of ether and tr. opii: the rigidity increased, and in the evening swallowing became difficult, and there was inability to move the jaw; the teeth were firmly set, and almost every muscle rigid, and the spine was bent to the arched form. A French physician was consulted on the case, and he advised the hydropathic treatment. Mr. Preshaw immediately proceeded to put it into operation. He says,]

I enveloped him in a linen sheet, well wrung out of cold water, Over this I placed three or four good blankets, &c. so as to exclude the air, and prevent evaporation. Kept the patient in this condition for an hour, by which time the temperature of the sheet was 100°, Fahr. The coverings were removed, and the patient plunged into a cold bath, rubbed quite dry, and enveloped in dry blankets for six hours, during which time he perspired very freely, and slept soundly, and said he "felt quite *slack*." Repeated the cold bath while in a state of profuse perspiration, and, after an interval of an hour, the wet sheet and subsequent cold bath. This was repeated every six hours, and after twenty-four hours, the jaw relaxed a little, and the spine became less bent. I now placed him under the douche for three minutes, the water falling from a height of twenty feet, and in a stream of one inch and a half diameter. Dried and enveloped in the blankets as before. Able to open the mouth a little. Ordered the sheet and cold bath as before, and ten days from the commencement of the treatment, every symptom yielded, and the boy is now quite well.

Lancet, Feb., 7, 1846, *p.* 154

24.—*Traumatic Tetanus successfully treated by Aconite.*—By W. B. Page, Esq., Surgeon to the Cumberland Infirmary.—[In several

particulars this case is most interesting, especially the length of time from the infliction of the injury to the appearance of tetanic symptoms; it was the 22nd day before the slightest stiffness of the jaw came on, and it is worthy of notice that the day before the trismus set in, the ward in which this patient was lodged was washed and cleaned. Mr. Page considers it probable that there is some concurrent cause in addition to the external, to produce tetanus, particularly cold and damp, and of course, deduces the inference, that patients should be kept as much as possible from the influence of any circumstances likely to act as exciting causes. The tolerance of aconite in this case is worthy of especial observation.]

This patient, on the 15th of December, in eight hours took nineteen minims of tincture of aconite, (prepared according to Dr. Fleming's formula;) on the 16th, thirty-two minims in fourteen hours; on the 17th, twenty-five minims in seven hours; and on the 20th, twenty minims in two hours. Dr. Fleming, in his treatise on "The Physiological and Medicinal Properties of the Aconitum Napellus," states that "the utmost extent to which he would recommend the physiological effects of aconite to be carried, in order to obtain, with safety and success, its therapeutic effects," is the administration of a second dose of five minims, two hours after the first. The remedy, to be effectual in this disease, must, I believe, be carried to such an extent as entirely to subdue the muscular spasm, and should be continued until the tendency to return of that spasm has materially diminished. To carry it to such an extent requires the extremest caution—the most constant attendance. And here I feel bound to acknowledge the judicious and scientific care which this patient received from Dr. C. B. Radcliffe, who at the time was acting as house-surgeon to the hospital.

Lastly, are we justified in ascribing the successful termination of this case to the employment of aconite? For my own part, although I by no means undervalue the other remedial measures which were adopted, I believe that the recovery may fairly be attributed to the administration of this drug. No one who reads this case can, I think, doubt the extraordinary influence which the aconite exerted over that spasm which is the essential characteristic of the disease, and which, in the majority of instances, destroys life, either by causing suffocation from spasmodic contraction of the diaphragm and muscles of the glottis, or by exhausting the nervous energy. A considerable experience of the remedy in this disease is necessary before any positive conclusion can be come to; but believing, as I do, that it was of essential service in this case, I have thought it right to make it thus public, in order that others may be induced to employ it under similar circumstances, and that in time a sufficient number of cases may be recorded, to render its curative power in this hitherto fatal disease free from doubt.

The analogy which exists between tetanus and hydrophobia naturally leads to the inference that if aconite be efficacious in tetanus it may also be employed with advantage in the latter

disease; and should a case occur in my own practice, I should certainly employ this remedy in preference to any other, carrying its effects, as in the above detailed case, to the furthest allowable extent. In fact, from my previous knowledge of the physiological effects of this drug, I had determined to administer it in the event of hydrophobia manifesting itself in any of six children who were bitten by a dog, in an undoubtedly rabid state, about the time when the foregoing case occurred. In five of the children the bitten parts were excised; and happily, I have not been called upon to test the therapeutic properties of aconite in any one of them. I may here mention that the results of Dr. Garrod's important experiments on the property which animal charcoal possesses of destroying the power of vegetable poisons, whether in or out of the body, together with his suggestion that it may exert a like influence over animal poisons, induced me to recommend the application of poultices of animal charcoal to the wounded parts, which was continued until they were perfectly healed.

Lancet, April 4, 1845, *p.* 394.

25.—*Case of Sciatica, treated by Blisters and Morphia.*—By Dr. Taylor.—[This patient was under Dr. Taylor's care in University College hospital. It appears that in lifting a heavy weight, he had strained his back, and that a few months afterwards, (July last), he was suddenly seized with pain in the right hip, – striking into the loins, and down the leg. On his admission, November 20th, he had still this pain, but there was no increased heat of skin : he was ordered to take, three times a-day, two ounces of guaiacum mixture, with 40 minims of am. tr. of guaiacum, and have a good diet; three days afterwards he was]

To increase the dose of the tincture of guaiacum to 1 drachm three times daily; a blister to be applied to the right hip, and the blistered surface to be dressed twice a day with 1 grain of hydrochlorate of morphia.

Nov. 26th.—The pain is at all times less than it was, and much less whilst walking than formerly. Bowels freely opened.

28th.—Still improving.

[The blister and morphia were repeated on the 29th, and on the 3d, 5th, and 8th of December. On the 15th, a stimulating liniment; and on the 18th he was discharged cured. Whether sciatica be rheumatic or not in its nature, it is certain that the seat of the disease is in the sciatic nerve. In the treatment of this case, Dr. Taylor attributes the cure to the blistering and morphia.

M. Valleix has published an excellent work on neuralgia. He also recommends the application of blisters,—but Dr. Taylor remarks that]

The plan of blistering advocated by M. Valleix is the application of flying blisters, as the French term them. This consists in having the blisters very small, allowing them to heal immediately, and in applying fresh ones as the seat of pain changes. This is

the treatment which he has himself put in practice, and which he finds more efficacious than any other. Particular portions of the nerve seem to be more liable to be attacked with pain than any others; these are the points at which they terminate. There are also various centres at which the pain is usually very great, as at the sacrum, great ischiatic notch, and at various other parts of the leg and thigh. We find an analagous case in hysteria, with spinal tenderness, where there is generally a good deal of pain on the side of the chest and under the mamma, at the points at which the nerves become cutaneous and near their terminations. Indeed, M. Valleix is of opinion that it almost amounts to a rule, that in all cases of neuralgia, the nerve is more likely to become affected where it becomes cutaneous and at its termination than at any other part of its course. After the application of blisters, the next best remedy in the treatment of this disease seems to be the internal administration of the oil of turpentine Opium given internally generally has, as before noticed, very little effect on the disease.

Medical Gazette, March 27, 1846, *p.* 566.

26.—*Treatment of Periodic Neuralgia.*—By Sir B. Brodie, Bart. —In those cases in which the disease has an intermitting and periodical character, you may always relieve it, as you may all other cases of intermittent and periodical character, by the exhibition of quinine, bark, and arsenic. But, then, if you give quinine, it must be in rather large doses; sometimes in very large ones. I saw, this very morning, a gentleman who had formerly a nervous pain in the back, almost as bad as the tic-douloureau in the face. It was intermittent and periodical. I told him, when he consulted me about it, that most probably the sulphate of quinine would cure him. He took ten grains daily without benefit; he took twenty with little benefit; and was not cured till he took half a drachm daily. Whether he had been supplied with genuine unadulterated quinine, I will not venture to say; but, at all events, he must have taken the medicine in very large doses. The combination of bark and arsenic, also, is an excellent remedy in these cases of intermittent and periodical disease; but I generally prefer giving quinine first, it being a more innocent medicine, requiring no watching, and the use of it not being subject to the inconveniences which belong to that of arsenic.

[The editor of the *Medical Gazette* says]

We are perfectly satisfied, from our own observation, of the almost specific power of this plan of treatment in removing the agonizing paroxysms of periodical neuralgia. Bark, if prescribed alone, requires to be given in such very large doses that the stomach is liable to refuse the remedy, before its desired effect upon the system has been obtained; but even in the most aggravated cases, we have never found the disease resist the action of large

doses of quinine, either taken by itself, or in conjunction with moderate doses of Fowler's solution.

Medical Gazette, March 20, 1846, *p.* 519.

27.—*On the Use of Valerianate of Zinc in Neuralgia.*—By JOSEPH BELL, M.D., &c.—[The remedies usually prescribed in the treatment of neuralgic affections frequently fail in relieving the disease. Dr. Bell has recorded several cases which he successfully treated with the valerianate of zinc. In the first case there was severe facial and orbital pain, which had continued for three weeks, with nocturnal exacerbations. He had made use of mercurial and saline purgatives; opium and its preparations; quinine; blisters also had been applied to the nape of the neck. Dr. Bell then prescribed the muriate of morphia and sulphate of bebeerine; still there was no subsidence of the symptoms. He then prescribed as follows:]

Hab. hydrarg. c. cret. gr. xxiv. Pulv. rhei opt. ℈iiss. Pulv. aromat. gr. xij. M. et divid. in pulver, xij. st. j. 2nd, q. q. nocte. Hab. valerian. zinc. gr. vi. Extr. hyoscyam. nigr. gr. xxiv. M. ft. mass. et divid. in pill. xij. st. j. 8va q. q. h.

18th.—Pain since yesterday much relieved; got more sleep last night than he has done since commencement of attack. T. improved; bs. tardy. Contr. et hab. ol. ricini. ℥i.

23rd.—Pain completely gone; T. clean. This gentleman has continued quite free from pain up till this date, and enjoys most excellent health.

[The next case Dr. Bell records is that of a lady, thirty-five years or age, who had severe pain in the brow and front of the head, of two weeks' duration. For some years she had been subject to similar attacks, which had continued for three or four months: she had been subjected to almost every variety of treatment likely to relieve her, without effect. Dr. Bell prescribed as follows on the 28th of September:]

Hab. pil. mass. hydrarg. gr. ij. Extr. hyoscyam. nig. gr. iv. omn. nocte. Hab. sulph. bebeer. gr. x. 4ta q. q. h. Hab. sol. mur. morph. ℥i. 8va q. q. h. Hab. ol. ricini, ℥i. p. r. n.

October 16.—Has persevered most regularly with her medicines. The dose of bebeerine has been increased for several days to a scruple every two hours, without any advantage. At first, she thought, that for an hour after each dose, she felt easier, but now she experiences no relief, except a few hours during the morning, when the pain is lulled, as it were, to break out again with aggravated intensity towards evening. Last night, I was called to visit her about eleven o'clock, when I found her almost in a state of distraction; intense pain shooting from the centre of elbow along course of sagittal suture to occiput. She was rolling about in bed in the greatest agony, and incoherent; P. 70. From six o'clock in the evening, she had taken two drachms of bebeerine, and two doses of her morphia. I ordered all her medicines to be suspended, and prescribed half a grain of the valerianate of zinc,

and two grains of the extract of hyoscyamus nigri. every eight hours.

18th.—Yesterday evening pain returned, but did not become severe, She slept soundly several hours during night, and has no pain this morning; T. cleaner; some appetite.

21st.—Has had no return of pain. General health improved.

Shortly afterwards, this patient removed to the country. She remained free from pain, till about a fortnight ago, when it returned.

She procured a box of the valerianate of zinc pills from town; and in a note to a friend, she states, "that the medicine was equally efficacious in speedily removing her sufferings, as it was on the former occasion."

[The third case described is that of a stout muscular man, sixty years of age. He was called to visit him on the 11th of December: he had pain above the orbits extending to the crown of the head; the pain was paroxysmal, but the intermissions of very short duration. After evacuating the bowels, he gave him quinine, and the saccharine carbonate of iron, with small doses of mur. and acet. of morphia. He also gave castor oil pills, so as to act freely on the bowels. The following treatment was then adopted:]

Intermit. medicam. et hab. valerian. zinc. gr. vi. Extr. hyoscyami. ʒss. M. ft. mass. et divid. in pil. xij. St. unam, 8va. q. q. h.

12th.—Pain of head better; he thinks pills produce sickness. Contr.

15th.—Has been almost free from pain since 12th, till about three o'clock this morning, when it returned, and continued for five hours, but much less intense than on previous occasions.

Hab. pil. val. zinc. 6ta. q. q. h.

17.—No return of pain. I saw him again on the tenth of this month; and he stated, that he has remained completely free from pain. His general health has gradually improved from the time he commenced using the pills.

Case 4.—January 9th, 1845.—Mrs. H. ætat. thirty years, of dark complexion; ordinary stature; complains of severe pain of right side of brow, extending down along same side of face to chin, and up to occiput. T. much furred; no appetite. Sleeps none at night, in consequence of pain, which becomes aggravated to an insupportable degree when she lies down in bed.

Has slight tonsillitis; P. 90. Pain of head and face of three weeks' duration. Soreness of throat commenced yesterday. She ascribes it to her being obliged to walk about the house during the night in consequence of pain.

Has taken several opium pills; and has had a blister applied to side of face. Has taken several purgatives.

Hab. h. s. pulv. Doveri, gr. xv. Hab. valerian. zinc. gr. ss. Extr. hyoscyam. nigri. gr. ij. t. d.

12th.—Pains gone. They subsided the day after she commenced her pills; throat well; T. clean. Appetite returned; P. 78. I have not seen her since.

The inferences which I wish to be deduced from these remarks are few, but practical.

1st, We should not endeavour only to remedy the impaired digestive functions, even where no other very obvious cause for the neuralgic attack exists, but at the same time direct our efforts to remove the pain, and procure sleep.

2dly. As the special remedies usually employed to effect the latter objects tend, even in ordinary circumstances, to impair the digestive process, and to deprave the secretions from the liver and the alimentary canal, their use is quite inadmissible in anything like a rational mode of treatment.

3rdly, Judging from the recorded experience found in the history of our profession, the white oxide of zinc and valerian, are entitled to great consideration, as remedies of considerable importance in the treatment of nervous affections, especially in neuralgia of the head and face, or hemicrania. Neither of these drugs have the effect of causing gastric disorder. Both have been acknowledged to possess great influence over the nervous system. In neuralgic disease, Meglin's pills* have been long celebrated; and my experience of them, especially when combined with the use of valerian, enables me to affirm that their reputation is not unfounded.

On the continent, the valerianate of zinc has been employed in various nervous diseases. Dr. F. Devay, in a memoir published in the *Gazette Medicale* for June, 1843, states that he has used it principally in facial and hemicranial neuralgic affections. In uncomplicated cases, its employment was attended with marked and continued efficacy. He remarks, however, that it had little or no beneficial effect in cases having a rheumatic, syphilitic, or intermittent taint. On the other hand, when the pain was connected with chlorosis, he found the valerianate exceedingly useful after a course of some ferruginous preparation. He also employed it in epilepsy, but with no flattering result. The memoir contains eight cases; three of hemicrania; three of facial neuralgia; one of intercostal neuralgia; and one of satyriasis. In all these instances, the action of the remedy was most beneficial. Dr. Devay administered it in doses of about 1½ grain, divided into two pills, one of which was taken morning and night, but he thinks that the dose may be much increased.

The Italian physicians give it in doses of 1½ grain daily.

M. Cerulli de Parme has obtained several cures, by causing the patient to take 1½ gr. at the moment of the accession of the pain, —(Rev. Med. tom. ii., 1844, p. 410.)

I have never given more than ½ gr. every six hours, and have

* These pills are composed of one grain of oxide of zinc, and one of extr. hyoscyam. nigr.

combined it always with the extract of hyoscyamus, which may possibly have contributed in some degree to effect a cure.

In British practice, so far as I am aware, the valerianate of zinc has been little, if at all employed.

[The sulphate of bebeerine so highly recommended of late in neuralgic affections, Dr. Bell gave it in two of his cases without any marked benefit. The cases under treatment were such as seemed likely to be relieved by it, but perhaps the specimen he used was not a good one. He adds]

I may mention, however, that its use seemed to be followed by a cure, in a very severe case of gastralgia. The patient had employed most liberally alteratives, trisnitrate of bismuth alone, and in combination with soda carb., ferri, c. sacch., and columba respectively. He also used hydrocyanic acid freely, without any advantage. I ordered him to take five grains of sulph. bebeerine every eight hours. He had used it only for a few days, when the pain ceased, and has not returned. Out of a great many instances in which I have prescribed the bebeerine, this is the only one in which I could ascribe to it any decided curative effects.

It seemed, however, to possess in some cases of dyspeptic hypochondriasis, connected with a deposit of oxalate of lime in the urine, considerable tonic properties. In one case of this nature, in which the sulphate of quinine disagreed with the patient, the bebeerine formed a most admirable substitute.

Northern Journal of Medicine, Feb, 1846, *p.* 87.

28.—*On the Efficacy of Tannate of Quinine in Typic Neuralgia.*—In 1831, Ronander cured several obstinate intermittent fevers, which had resisted the sulphate of quinine, and other powerful febrifuges, with this remedy. In 1833, Buchner repeated the proposal to substitute tannate for the sulphate and muriate of quinine. The author tried the tannate in intermittent neuralgia and intermittent fever, in cases were the sulphate of quinine had no effect, or only caused some trifling improvement, and he invariably found the above recommendations confirmed. The dose is about the same as that of the other salts of quinine.—*Dr. Hauff, of Kirckheim, in Oesterlen's Jahrb.*

Northern Journal of Medicine, Dec. 1845, *p.* 434.

29.—*On the Use of Aconitum Napellus in Neuralgia.*—By J. Kirby, M.D., &c. &c.—[It frequently happens that new remedies are made use of so much at random as speedily to bring them into discredit with the profession; but in the revival of the use of aconite as a therapeutic agent, we believe we have a valuable means of doing good. It is of the greatest importance that it be used with caution, or serious mischief will be the result.

Dr. Kirby reports two cases in the *Dublin Medical Press*, from a perusal of which, it will be evident how carefully this remedy

should be applied for the relief of disease, at the same time they afford abundant evidence of its therapeutic power.]

Case 1. One drachm of the tincture of aconite of the shops was rubbed up with an ounce of yellow fresh palm oil, and applied in drachm quantities, thrice a-day, to the legs of an old lady, whose pains appeared to me to be of a purely neuralgic character.

In the evening the pains were relieved; at night she raved, was painfully vigilant, talked of strange visions, and so far alarmed her family as to induce them to send for the apothecary, who very properly ordered the unction to be discontinued, and the legs to be washed clean. The next morning she was free from pain, gave a sad account of her troubled night, and told me that she was affected as she was used to be by opium, the use of which she always dreaded. A few glasses of wine set the old lady to rights, and she was well in the evening. It deserves to be recorded, that the maid who rubbed her complained that her hands were benumbed, and this sensation continued for several days.

Case 2. I ordered two drachms of tincture of aconite of the shops, with four ounces of camphor liniment, to be rubbed into the back of a gentleman complaining much of dorsal pains, which were particularly distressing at night. On the first occasion only a table spoonful of the liniment was employed. He felt local relief, but he suffered much during the night from vigilance, occasional drowsiness, startling dreams, and floating visions, such as he never before experienced, unless under the influence of opium. He complained that the odour from the first disturbed his senses, and that during the night it was so offensive he tried to escape from it; at one time, by enveloping his head with his bedclothes, at another time by sitting up above the range of the dense vapour, to which he attributed the turbulent and miserable fantasies of the preceding night. My morning visit found him sick to vomiting, with headache, and without appetite, looking sallow and haggard—appearances which he did not lose until noon, when a tumbler of mulled wine and water, with a drive of a few miles, so fully refreshed him, that he was able to dine as usual, and by evening he had forgotten all about the history of the preceding delirium, yet he begged to have no more of the liniment.

Since these observations were written, the last *Medico-Chirurgical Review* shows me that Dr. Fleming has been engaged in an inquiry as to the medicinal properties of the aconites; and I think it necessary to make this remark, lest any saying of mine prefatory to the cases may be supposed to have any reference to his therapeutical proceedings, which I beg distinctly to assure him they have not.

Dublin Medical Press, Jan. 14, 1846, *p.* 23.

30.—*Cannabis Indica in Intermittent Facial Neuralgia.*—By W. Hargrave, Esq.—[A patient of Mr. Hargrave's, who was subject to attacks of neuralgia of the supra-orbital nerve, for which he had taken quinine, iron, arsenic, &c., without any relief, had a

return of the disease, whilst under treatment for hepatic derangement. It was so decidedly periodical, commencing at eight, a.m., and declining at two, p.m., that Mr. Hargrave determined to give the condemned quinine. Accordingly he ordered him to take a pill containing 3 grains of sulphate of quinine, and $\frac{1}{8}$ of a grain of sulphate of morphia, an hour before the expected attack. The following day (March 4th), there was relief afforded, and the tincture of Indian hemp was then prescribed.]

℞. Tr\u0153 cannabis Indic\u00e6, ʒ ii.
Capr. gtt. v. in. ℥i. Camp. julep. ter. in die.

5th. At eleven a.m. found him in great suffering; no change in the periodicity of the attack.

Directed to rub some cajeput oil to the forehead and brow of the affected side. Sulp. quin\u00e6, gr. iii. in forma pilul\u00e6, to be taken at night, also in the morning, with the cannabis Indica.

6th. Pain did not begin till ten a.m., in place of eight.

To increase the tincture of can. Ind. to seven drops, and to continue the quinine (three grs.) three times a day.

7th. Pain at the hour of yesterday, ten a.m.

9th. Free from pain yesterday till eleven a.m.; character altered —that is, he can bear it, and subsided so much before two p.m. that he could leave his house. This morning the pain returned at half-past ten, a.m.; it was still diminishing in intensity. As the quinine was beginning to exhibit its usual effects on him, tinnitus aurium, with confused noises through the head, compared by him to a "brass band," it was discontinued, and the tr\u0153 cannabis increased to gtt. decem. ter in die. He went into the country for a few days, and returned perfectly free from pain.

Though in this case, there was a combination of two very active agents to combat the severity of the neuralgic attack, and a local one—namely, the cajeput oil, which I know was genuine,—(*en passant*, I may remark that in one instance, in a married lady, who was suffering much from sciatica, in which every treatment had failed to afford any ease, for three days the most marked benefit was derived from the application of the oil over the origins of the sciatic nerve; the pain afterwards returned, but with diminished intensity, and was more amenable to the means then adopted for its removal).—no doubt remained on my mind that the cannabis controlled the paroxysms of pain, perhaps also its periodicity, and when increased to seven and ten drops, its effects were more decided. In no instance did it produce any intoxicating effect, or any approach to it, except on one occasion, when some nausea of the stomach supervened, on taking the prescribed quantity.

[Not until two years after this was there a return of the complaint, when it made its invasion in the left superior maxilla, in the alveolar ridge. Every substance, no matter what its temperature, produced great suffering on touching the gum.]

He was ordered the tr\u0153 cannabis Indica in seven-drop doses in camphor julep, to be increased to ten, three times a day, if neces-

sary. Before the fifth day, he was completely relieved from pain, and was most delighted to experience no inconvenience whatever from solids or fluids of different temperatures when taken into the mouth, though they came into direct contact with that part of the gum previously so painful. It is necessary to observe that the attack of neuralgia on the second occasion came on at night, and did not observe the same marked periodicity that it did in 1843; there was scarcely any remission of it.

Whatever doubts might be entertained as to the efficacy of the cannabis when exhibited at the time that this gentleman was suffering from frontal neuralgia, as it was then conjoined with quinine, no doubt whatever can exist of its efficacy the second time that it was administered after the lapse of nearly three years, as my sole reliance was upon it, having been given *per se*, and proving itself a valuable agent in certain cases of nervous affections.

Dublin Medical Press, Dec. 18, 1845, *p.* 379.

31 — *Neuralgia treated by Colchicum.*—By GEORGE FIFE, M.D. Colchicum, of all the means internally employed, deserves most confidence in the treatment of this painful and distressing disease; the advantages of this medicine in these cases, seem if possible to be greater than those which it possesses in gout and rheumatism. From what has been lately said of this medicine, this praise may, by some persons, be regarded as somewhat dubious; such is not, however, to be considered as the meaning with which the previous remark is made; on the contrary, I can safely affirm that so far as my experience of this medicine extends, I regard all other means as secondary or auxiliary to it, not only in the disease under consideration, but also in gout and rheumatism, in which it has become fashionable to decry its merits, if not actually to accuse it of prejudicial effects. That such do result from the indiscriminate and irrational manner in which it is employed, cannot be questioned, but in my practice, which now extends over a considerable period, and during which many cases of gout have been treated, I can call to mind no case in which the colchicum has been injurious, or followed by unpleasant effects, which may also be said of its exhibition in rheumatism.

In most of the cases, where local appliances were resorted to, they were used as ointments rubbed over the affected nerve. In some, however, of a more severe character, the morphia was applied to a surface previously blistered. This was, in some cases of sciatica, attended with not only speedy but permanent advantage, and certainly seems highly preferable to Mr. Syme's (of Edinburgh) very farrier-like practice of the cautery.

In cardiac neuralgia the colchicum was especially useful, either with or without a few drops of the tincture of digitalis with each dose, when the action of the heart was much increased as well as irregular. A local application in these cases, of great efficacy in relieving both the inordinate action and intense pain, was the tobacco-leaf, slightly moistened and placed over the region of the

heart, care always being taken to remove it so soon as any feeling of giddiness, faintness, or sinking, was experienced by the patient. For this simple and truly efficacious application, I am indebted to the late amiable and talented Dr. Macwhirter, of Newcastle.

Provincial Medical and Surgical Journal, April 15, 1846, p. 165.

32.—*On the Treatment of Chorea*—By William Smith, Esq., Bristol, Fellow of the Medical and Chirurgical Society of London, &c.—[The following are the indications of treatment pointed out by Mr. Smith, in this disease :]

1st.—Mental and moral quietude. All attempts to excite the intellect or feelings to be avoided. The extreme excitement about the brain to be subdued by occasional slight local depletion,—by the application of cold water, and by keeping the hair short.

2ndly.—The normal activity of the intestines and stomach to be restored, first, by an emetic of sulphate of zinc, to be followed by the employment of brisk purgatives of castor oil, and oil of turpentine; subsequently, small doses of sulphate, or oxide of zinc.

3rdly.—General tonic measures. Amongst these, cold water holds the highest place. It should not, however, be applied so as to give a violent shock to the nervous system; but applied either with a sponge or gentle shower bath.

4thly.—All measures which would have a tendency to congest the brain are to be avoided. Hence, I would not advise opium, except in cases where all tendency to congestion of the brain, or its membranes, is clearly absent. Even in these cases, camphor, in grain doses, may be advantageously substituted.

As before observed, cold water must not be employed in the terrifying and violent manner which was evidently its mode of employment in some cases translated from a foreign journal. All its beneficial effects may be obtained by a gentle shower bath; or if this cannot be borne, by sponging, or friction, for five minutes, in a wet sheet. Warm water pediluvia must not be neglected, as the state of the feet bears an important relation to the condition of the brain. The exercise should be such as nature prompts, and that only. No "physical education" quack should be permitted to rack the feeble muscular fibres; and above all should be observed the golden maxim of the great Latin physician, that the exercise should be "citra fatigationem."

As a general rule, spirits, beer, and wine, for obvious reasons, should be avoided. In one case which I attended, I found the mother gave the patient, a very young child, strong beer, and spirits and water, "to brace the nerves," as she expressed it. This, of course, augments the cerebral excitement to a great extent. Sometimes, however, a little ale may be given with advantage. Strychnine may, when used with great caution, produce beneficial results; but when other means will succeed, we are not justified in the employment of such a powerful poison.

Lancet, Jan. 24, 1846, p. 92.

33.—*Hysteria Treated by the Application of Cold to the Region of the Uterus.*—[M. Butignot, in the *Journal de Medicine de Toulouse*, mentions the case of a young woman, eighteen years of age, attacked for the first time with hysteria, which lasted seven days. She was quite blind during this period, but remained perfectly sensible. There was permanent contraction of the muscles of the trunk and extremities, with occasional convulsive movements. She could only swallow a few drops of liquid at a time, and speak a few words in a low voice. Treatment was of no avail, soothing and antispasmodic remedies did no good, but M. B. remarked on the fifth day that the paroxysm became aggravated about noon; he immediately gave quinine, under which treatment the symptoms gradually subsided.

The following year she was again attacked as before, and from pain in the hypogastric region, with suppressed catamenia he was led to infer the existence of over-excitement in the uterus. He ceased all treatment, and applied cold compresses to the lower part of the abdomen and upper part of the thighs. In half an hour the patient was relieved, and had no return of her symptoms.]

Monthly Journal of Medical Science, Feb., 1846, *p.* 136.

34.—*Tooth-ache treated with Vienna Paste.*—By Chas. Stokes, Esq. It may not be without interest to the medical profession generally, more especially to those gentlemen who practise in the country, to know that very great relief may be afforded, in attacks of tooth-ache, by the application of anhydrous lime and caustic potass, commonly called *pâte de Vienne*. I have used it for a considerable period of time, and with almost uniform success.

The method which I generally adopt for its application, consists in making a thick paste of the above powder, by means of pure alcohol. I then take a sufficient quantity, in the shape of a small pill, on the end of a silver probe, and introduce it into the cavity of the tooth, which should previously be well dried.

After remaining in contact with the carious portion of the tooth for three or four minutes, the paste may be removed, and the mouth well rinsed with tepid water; after which fill the cavity with fine cotton.

Great care is requisite to guard against any portion of the paste falling into the mouth, or upon the fauces, the effect of which would be instantly to create a painful slough.

Lancet, March 21, 1846, *p.* 347.

ORGANS OF CIRCULATION.

35.—TREATMENT OF ANÆMIA.

By James Turnbull, M.D., Physician to the Liverpool Northern Hospital.

[In treating anæmia, Dr. Turnbull recommends the use of remedies which improve the general health and strength of the patient, and tend to increase the quantity, and improve the quality of the blood; these are, the vegetable bitters, the sulphate of quinine, and other tonics, but especially the *preparations of iron*, which have a powerful effect in increasing the quantity of that constituent of the blood which is deficient in anæmia.]

Iron, either in the metallic or oxidated state, forms the chief part of the hæmatosin, which is contained within the external envelope of the red globules. It is to the iron of the hæmatosin that the bright-red colour of the globules is owing; and it is a singular fact, which has been proved by analysis, that in anæmia the deficiency of the red particles is in close relation to the diminished quantity of iron in the blood. Becquerel and Rodier found, that while the mean quantity of iron in 1000 grammes of calcined blood from individuals in health, and corresponding with 141.1 of globules, was 0.565 of a gramme, the quantity in thirty-one cases of anæmia, with 94.7 of globules, was only 0.366 of a gramme in the same quantity of calcined blood.

The preparations of iron seem to act in removing anæmia in a twofold manner. First, by their tonic properties, which they possess in common with the vegetable bitters, and several of the metallic tonics, such as the preparations of zinc and silver, all of which prove of service in anæmia, by increasing the digestive powers, and promoting the due assimilation of the food taken. Iron acts in addition in a more direct manner, by mixing with the chyle elaborated from the food, which thus becomes more highly charged with the principle which is chiefly concerned in the formation of hæmatosin. The iron of the hæmatosin is derived from our food, small quantities of this metal being found in many kinds of vegetable food which we are in the habit of using. It exists also, in small quantity, in animal food; not, however, as a part of the cellular and fibrinous tissues which constitute meat, but as forming a constituent of the blood, some portion of which must always remain in the capillary vessels. There are also small portions of iron in milk and in eggs. It is from these sources that the iron of the blood is derived; and as it scarcely enters into the composition of any of the solids of the body, the only purpose which it seems to serve, is the absorption of oxygen at the lungs, the transportation of it to the capillaries, and the excretion of carbonic acid. It appears not improbable, that deficient power of separating the iron from the food, and taking it into the circulation, may in some cases be connected with the origin of anæmia. Be this, however, as it may, there can be no doubt that the administration of iron in a

form in which it can be readily absorbed by the stomach and intestines is the most effectual means of increasing the quantity of globules, and removing the pallor and the functional disorders of anæmia. That the quantity of the globules is increased by the administration of the preparations of iron, has been proved by several observers, from analysis of the blood in anæmia before commencing, and after giving, iron for a considerable time.

In some cases, it seems to be a matter of little moment which of the preparations we employ, for even when taken in the metallic form, it is acted upon by the secretions of the intestinal canal, and a portion dissolved and absorbed into the blood. In the state of soluble salt, it is, however, most readily taken up, and is most active. The sulphate of iron is one of the most useful and active preparations, and it may be given in the form of pill, with a bitter extract, such as that of gentian, or a sedative, such as hyoscyamus or conium, or with an aperient powder or extract, such as aloes or rhubarb, or with any of these combined. It may also be given in solution, with a bitter infusion, to which a little sulphuric acid has been added, to hold the iron in solution; or it may be exhibited in combination with the sulphate of magnesia or potass, the solution being acidulated with sulphuric acid. It may thus be given in combination with several of the medicines required in anæmia; and from this circumstance I have used it more frequently than any of the other preparations, and I have also found it one of the most efficient. The sesquioxide of iron is a convenient form when we have to treat anæmia in children, to whom it may be given with compound cinnamon powder, or with rhubarb, or mercury with chalk, where the secretions are deranged. I have also given it to adults, along with confection of senna, bitartarte of potass, and sulphur. This combination possesses several advantages inasmuch as it increases the secretions from the skin, kidneys, and intestinal canal, whilst it exerts a tonic effect by the introduction of iron into the system. The compound mixture of iron is a good preparation. It is milder than the sulphate, but it scarcely equals this, and the tincture of the muriate, in efficacy. This last preparation is one of the best, but it does not admit of being administered in so many forms as the sulphate. Several of these preparations seem to me to me to be often given in larger doses than is necessary, where we wish to obtain little effect beyond the absorption of the iron, which they contain, into the blood. This observation applies especially to the sulphate and the muriated tincture, the astringent properties of which, along with the irritation produced by large doses, may, in many cases, rather tend to prevent absorption. The regeneration of the globules, when much diminished in quantity, must require a considerable time, and it has appeared to me that this object might be best attained by giving moderate doses, at short intervals, for a long period. That the efficacy of the preparation is not in proportion to the quantity of iron it contains, is proved by the fact, that many mineral waters are very powerful, though they contain less than a grain in the pint. I have several times given with good

effect a grain or two of the sulphate of iron, with aloes, in the form of pill, twice or thrice a day, whilst at the same time I have exhhibited, as often, a mixture containing the citrate or some other preparation. In this way the sulphate has been exposed to the absorbent action of the whole intestinal mucous membrane, whilst the absorbent power of the stomach has been exerted upon the other preparations in solution. The preparations made from combination of iron with the vegetable acids are less efficient than those with the mineral acids, and Dr. Williams observes that the citrate and tartrate are more tardy in their operation. These are, however, milder in their action, and they may therefore be commenced with as a preparation for the others, which are more powerful, when there is great sensibility of the stomach, or of the system generally; for we not unfrequently find that the stronger preparations of iron, when first administered, increase all the anæmic symptoms, especially those referrible to the stomach and head. The potassio-tartrate of iron may be given, along with the bitartrate of potass, when there is œdema of the ankles, or of the cellular tissue generally, and when we wish, therefore, to produce a diuretic effect. The iodide of iron is a preparation which combines in some degree the properties of iodine with those of iron, though the latter predominate. It seems to promote the secretions more than any of the others, and it sometimes acts as a diuretic. Where it has not proved too stimulating, I have found it one of the best tonics in the anæmia of phthisis. It may also be given in all cases of anæmia combined with enlargement of the glands, as well as where the tonsils are enlarged. In cases of chlorosis, with much torpor of the system, and where none of the symptoms, referrible to particular organs, are very prominently marked, it is often speedily efficacious; and from having found it cause the return of the catamenia in cases of amenorrhœa, where other preparations of iron had been used for a considerable time without effect, I am disposed to think that it may exert a directly stimulating action on the uterus. Dr. Williams states, that in many comparative trials he found the iodide of iron, in solution with syrup, the most speedily efficacious of the preparations of iron, and that by its use he has seen females restored from extreme pallidity to a rosy hue of health in less than three weeks.

There are other tonics which are useful in anæmia, such as the vegetable bitters, gentian, cascarilla, calumba, which may be given in conjunction with iron. In many cases, too, where there is much irritability of the system, the preparations of iron cannot at first be borne, as they cause heat of skin and thirst, or sickness, or headach; and when this occurs, it is necessary to promote the secretions, and to give the vegetable tonics with sedatives, in order to prepare the system for the exhibition of iron. Quinine is very useful in many cases; it seems, however, to act more through the nervous system, and less directly upon the blood, than chalybeates, and it does not continue to produce a beneficial effect during so long a period. It is most useful in the anæmia from lactation and from

profuse menstruation, and in some of these cases it may be given in solution along with sulphate of iron and sulphuric acid. In most cases of profuse menstruation the preparations of iron are hurtful, and in these, quinine and the shower-bath are preferable.

When there is much depression or irritability of the nervous system, we must administer stimulant and antispasmodic, or sedative medicines; such as carbonate of ammonia, camphor, valerian, hydrocyanic acid, and hyoscyamus. The carbonate of ammonia is exceedingly useful in equalizing the circulation, which is very often irregular in anæmia, and in restoring the temperature of the extremities when they are cold.

Our plan of treatment should be, in general, regulated chiefly by the state of the digestive organs, as it is through this medium that we act upon the deranged condition of the blood. When the tongue is pale and clean, without redness at the point, and there is only weight and uneasiness during digestion, with or without eructation, but without sickness and vomiting, and the extreme sensibility of the nerves of the stomach, we may commence with the compound iron mixture, or with the muriated tincture in a bitter infusion, or with pills of the sulphate of iron, constipation being, however, in all cases, removed by some of the means that have been pointed out. In many such cases the preparations of iron in a short time remove the dyspeptic symptoms. In those where the sensibility is greater, where there is severe pain after taking food, and occasional sickness and vomiting, and when there is an extremely anæmic state, it will be well to lessen the sensibility, and restore, in some degree, the tone of the stomach, by sedatives and stimulants, combined with the vegetable bitters, before exhibiting any of the preparations of iron. The infusion of calumba may be given with carbonate of ammonia, or with soda and hydrocyanic acid, or with tincture of hyoscyamus or the muriate of morphia. The addition of compound tincture of cardamoms, or of some aromatic tincture, will also, in many instances, prove useful. In this way we shall gradually lessen the sensibility of the stomach, and prepare it for the milder preparations of iron, or for the sulphate, which, in these cases, may be given in the form of pill with hyoscyamus and aloes, and in this way its action will be exerted less upon the stomach than upon the intestinal canal.

Where there is pyrosis, a similar plan of treatment must be adopted, but the secretions from the liver and intestinal canal must be more freely promoted by rhubarb, magnesia, or carbonate of soda and mercury with chalk, or by colocynth and blue pill at night, followed in the morning by a draught with the infusions of senna and gentian, and the sulphate of magnesia, or tartrate of potass.

In the cases of gastrodynia, with pain of neuralgic severity occurring at intervals, especially after taking food, hydrocyanic acid and the muriate of morphia are the remedies most generally useful. The nitrate and the oxide of silver are also of service; and a plaster of belladonna applied over the stomach will often remove, and will almost always relieve, the pain: belladonna, in fact, affords

relief from almost all the neuralgic pains of anæmia, and is a most valuable remedy. Stimulating liniments, blisters, and the external application of croton oil, and tartar emetic, may also be tried when the pain is severe and obstinate; but leeches, though they may occasionally give a little temporary relief, should never be employed, unless there be some inflammatory irritation of the mucous membrane.

When there is irritative dyspepsia, with redness at the tip of the tongue, thirst, feverishness, and pain or rather sorenesss at the stomach, it sometimes becomes necessary to apply a few leeches, and even to repeat the application in order to prepare the stomach for tonics. The nitrate of potass, and the muriate of ammonia, when given in these cases along with hydrocyanic acid, produce a feeling of coolness at the stomach, and assist powerfully in removing the inflammatory state of the mucous membrane. These medicines may be given at first in water, and afterwards in infusion of calumba or quassia, until the stomach can bear the milder preparations of iron in solution, or the sulphate in the form of pill. Milk and farinaceous food constitute the most suitable diet in the early stage of these cases.

When, from the severity and persistence of the pain at the stomach, or from the occurrence of hæmatemesis, we have reason to suspect the presence of ulceration of the gastric mucous membrane, our treatment will not differ materially from that recommended for gastrodynia. Chalybeates should still, if possible, be given, and counter-irritation should at the same time be employed. Sulphate of iron, given according to the formula of Dr. Abercrombie, is, perhaps, the best remedy we possess; two grains of the sulphate of iron to be taken three times a day, in combination with five of aromatic powder and one of aloes. Much will also be gained by attention to diet, which should be easily digestible, and at the same time nourishing.

In cases where there is relaxation and increased secretion from the bronchial mucous membrane, the combination of the mineral acids with the other tonics is desirable. I have occasionally found the tincture of cubebs useful in checking the secretion, and have been in the habit of giving it, combined with oxymel of squill and compound tincture of camphor. Counter-irritation should also be used; and the following is the formula I employ:—One drachm of croton oil, with four and a half of olive oil, and half a drachm of cajeput oil, made into a liniment, and rubbed upon the chest twice a-day.

Little modification of the general plan of treatment is required for palpitation of the heart, and for anæmic pulsation of the aorta. The removal of any complications connected with the digestive organs, and the use of chalybeates, are generally sufficient to take away these symptoms. The compound galbanum pill may be given to remove flatulence; and when the circulation is feeble, with disposition to faint, the carbonate of ammonia, with valerian or

ether, will counteract this, and tend to restore the circulation in the extremities.

When the nervous system is in a very irritable and easily excited state, so that the slightest noise is sufficient to startle the patient, camphor, in combination with the extract of hyoscyamus, will be found serviceable, or the carbonate of ammonia may be given with tincture of valerian in camphor mixture or a bitter infusion. Sulphate of quinine in solution, along with sulphuric ether, may also be found of use. The vertigo, noises, and headache, are in general removed only by degrees, in proportion as the quality of the blood is improved, and unless unusually severe, they do not require any special treatment. It has been already observed, that in some cases the preparations of iron increase the head symptoms, and when this occurs to any considerable extent, or when the pain in the head is unusually severe, or the vertigo so great as to endanger the patient falling, we must proceed, in the exhibition of chalybeates, in the same gradual manner as where there is much irritability of the digestive organs. These symptoms of congestion are too often treated by depletion with leeches, which frequently increases the pain and feeling of giddiness, and necessarily proves always more or less injurious in a state of anæmia, owing to the removal from the system of a portion of all the constituents of the blood. In these cases, if the symptoms are urgent, or if a mild stimulant plan of treatment with purgatives, and followed by the cautious use of some of the preparations of iron, do not remove the unpleasant symptoms, a blister should be applied to the nape of the neck. This will seldom fail to give relief, and it is the remedy best suited to these cases, as it removes congestion of the vessels by producing depletion, without, however, taking from the blood the part which is deficient in anæmia. I may also observe, that in all cases of congestion, and even acute inflammation, occurring in anæmic persons, we should be sparing in the use of blood-letting, general or local, which is the most direct means of lessening the globules; and we should give the preference to the application of blisters, which, in anæmic individuals, are scarcely less efficacious than blood-letting, and produce depletion by removing from the blood the liquor sanguinis, without affecting the globules, which are already deficient, and can, in many cases of spontaneous anæmia, be renewed only slowly and with difficulty. A spirit lotion is a suitable application in cases of pain in the head from anæmic congestion or neuralgia.

The periodic neuralgic pains of the face are to be treated by the external application of belladonna, and by quinine, and the carbonate and other preparations of iron. The pains in various parts of the body, in the spinal column, and in the nerves issuing from it, are to be treated by stimulating and anodyne liniments, the belladonna plaster, and, occasionally, blisters.

We have still to notice those cases of anæmia in females where suppressed, irregular, or scanty menstruation forms a prominent symptom. The secretions from the intestinal canal having been first evacuated by means of mild mercurial medicines, the bowels

are to be kept open once or twice daily by means of the aloes and myrrh, or compound aloetic pill, or by the compound decoction of aloes. Dr. Ashwell regards the combination of cordials with aperients as important, and recommends the following draught to be taken twice or three times a-week:--Powdered rhubarb; carbonate of magnesia: of each half a drachm; aromatic confection, one scruple; cinnamon water, nine drachms; compound tincture of cardamoms, one drachm. He recommends that the sulphate of iron should be taken three times a-day, in the dose of one or two grains, combined with extract of hop, aromatic confection, and a single grain of poppy or hyoscyamus extract. I frequently prescribe pills made with sulphate of iron, powder or extract of aloes, and extract of hyoscyamus, of each, one scruple, divided into twelve pills, and one taken three times a-day. The superior efficacy of the iodide of iron in many of these cases has been already adverted to. From half a drachm to a drachm of the syrup may be given three times a-day in water, or in infusion of quassia.

Where other preparations of iron have been injurious, Dr. Ashwell has found the carbonate in the following combination agree with the patient:—Carbonate of iron, eight grains; powdered ipecacuanha, one grain; mercury, with chalk, two grains. This powder to be taken once or twice a-day. He also recommends, when the general health is somewhat restored, the use of the mustard hip-bath, or the local salt shower-bath, or the injection into the vagina of a drachm of liquor ammonia to a pint of milk. Where the uterus has seemed to require to be stimulated, after the restoration of the general health, I have in many cases found effectual, a draught with turpentine and castor oil.

The slight œdema of the ankles and of the cellular tissue generally, which is occasionally met with in anæmia, and chiefly in that form under consideration, viz., chlorosis, requires that the treatment should have especial reference to this complication. In these cases, there is, for the most part, considerable fulness of the vascular system, and the diminished proportion of globules is, perhaps, as much the effect of retention in the blood of the fluid part, from deficient excretion from the skin or kidneys, as from absolute diminution of the globules; at all events, the deficient excretion seems to be the cause of the anæmia. Our first object must be to increase the secretions from the bowels, the kidneys, or the skin, or from all of them, so that the specific gravity of the liquor sanguinis may be increased, and the natural relations between this fluid, the chyle, and the fluid of the globules, restored. The aperient best suited to these cases is the compound powder of jalap, alone or with calomel, or the bitartrate of potass. The potassio-tartrate of iron may also be given, along with the bitartrate of potass, to act as a diuretic. The sulphate of magnesia or of potass, given along with sulphate of iron, will act upon the bowels and kidneys, besides introducing iron into the system. Where the bowels have been very obstinate, I have combined a small quantity of elaterium with the sulphate of iron and aloes, in pills. The restoration of

the healthy action of the skin is of the first importance in these cases, and the cutaneous transpiration should be promoted by baths, friction, and exercise. A few warm baths will cleanse the skin and prepare it for the excretion of the perspiration, which must afterwards be kept up by friction of the surface, and exercise. In several cases of chlorosis I have seen a single warm bath completely remove the œdema of the ankles.

Lancet, April 18, 1846, *p.* 427.

36.—*On the Depuration of the Blood.*—By G. H. Barlow, M.D., Physician to Guy's Hospital.—[In a paper read before the Physical Society of Guy's hospital, Dr. Barlow laid it down as an axiom, that the blood in the living body is freed from the superfluous noxious matter by two things, air and water. He observes]

We know that air, which supplies oxygen as the supporter of combustion, and food, (by which is meant organic matter), which supplies carbon, the combustible, and azotic principles to replace the effete particles of the tissues, are the two great supporters of animal life. But, as a necessary result of these two processes of combustion and nutrition, we must have the products of the combustion, (to wit, carbonic acid and water), and effete particles, whose place is supplied by nutrition, to account for; and the question arises, are these carried out of the system? and how? Now, I need not stop to show that the products of combustion, carbonic acid and water, are carried out of the system by the lungs; neither is it necessary to prove that the former of these acts as a poison when retained in any great quantity in the circulation. I would merely notice, that in order to its being removed from the blood, this fluid must be exposed in the extreme branches of the pulmonary vessels to the air, or some gaseous fluid in the air-cells.

It may be stated generally, that air is the agent by which the gaseous impurities are removed from the blood. It must also follow from hence, that if the free access of air to the cells, or the free circulation of the blood through the lungs be impeded, the inquination of the blood by gaseous excretions must be one of the consequences.

In speaking of the bile and the urine, it is perhaps hardly necessary that I should enter into the question of the sources whence the constituents of these secretions which exist in the blood are derived; a few facts which are, I believe, now generally admitted, will be sufficient for my purpose.

The former of these secretions is a liquid, consisting of water, holding in solution certain soluble principles, which are uniformly present in health; these principles are, in part, though most probably not wholly, excrementitious; certain, however, it is, that the bile cannot be retained in the system, without causing considerable disturbance there. These principles are also present in healthy blood, and it is the office of the liver to remove them.

The urine, again, is a liquid consisting of water, holding in solution various solid matters, which may be divided into two classes. 1. Those lower organic products which are formed in the extreme circulation, or, in the phraseology of Liebig, the products of the transformation of tissues, *e. g.* urea, urates, &c. And 2. Those soluble substances, which are taken in with the ingesta, and which do not undergo decomposition in passing through the system, as, for instance, neutral salts, with inorganic acids, &c. The matters of the former class produce an injurious effect upon the system when not expelled from it, and I need hardly add that both these classes of substances are carried off by the kidneys.

Now, it may appear needless to remark, that both the liver and the kidneys are adapted to excrete only liquids, and, consequently, that the elements of the bile and the urine cannot be removed unless they are brought to these organs in a state of solution, in which state also they must pass through their excretory duct. Hence it follows, that a continual supply of water is necessary for the depuration of the blood from those matters, which it is the office of the above named viscera to remove.

The course of the water fulfilling this office, may be traced as follows. That which is received into the stomach is, with such soluble matters contained in it as are not decomposed in the primæ viæ, taken up by the capillary branches of the vena portæ, carried onwards with the blood through the portal trunk, and again dispersed through the ramfications of that vein in the liver; here a portion of it is again separated from the blood in order to form the solvent for the solid contents of the bile. Passing onwards through the pulmonic and systemic circulations, the redundant water of the blood carries with it those undecomposed soluble matters which it contained at first, and receives, or rather acts as a solvent to, those products of the transformation of tissues which act as poisons if retained, and are, therefore, uniformly excreted from the system, or at least, from the nourishing fluid. Holding these matters in solution, it is carried on with the current of the blood, (furnishing, in its way, the water requisite for various secretions), to the other great excretory organs, the skin and the kidneys, where it passes out of the system, carrying with it, in solution, through each of these, the matters which that organ is more expressly designed to eliminate, but which, as has been already observed, it cannot separate unless brought to it in solution. We see, then, one important part which water performs in the animal economy, and as we have already pointed out that a due supply of atmospheric air, and its free access to the air-cells of the lungs, is necessary, in order to eliminate the carbonic acid which is the result of the combination by which animal heat is maintained, so is the due supply of water, and its free passage through the course which has just been laid down, necessary to the removal from the system of those lower organic products, the result of the continual transformation of tissues necessary to the maintenance of the life and health of the body, but which act as poisons if they are not quickly expelled

from the system; or, in other words, air and water are the agents employed by nature for the depuration of the blood. We have also seen that there is an apparatus provided for the application of each of these substances to the blood, in such a manner as to enable them to receive and hold in solution the substances which it is necessary that they should remove.

[The morbid consequences arising from imperfection in the apparatus for removing gaseous impurities from the blood, are of a two-fold character.]

1. Those arising from the inquination or non-depuration of the blood; and 2. Those produced mechanically, by obstruction to the circulation of the blood through the lungs, as sanguineous congestions, effusions, &c.

The effects of obstruction in the course which the water absorbed into the circulation pursues through the system, until it finally escapes by one of the excretory organs, have not, as far as I am informed, been traced by authors so systematically as those arising from impeded respiration.

These morbid consequences may, as in the former case, be divided into two classes. 1. Those arising from retained secretion: 2. Those produced mechanically by obstructed circulation, and, in addition, there may be the direct effect of the primary lesion, which produced the obstruction.

The first entrance of the water into the circuit, which I have already traced, may be opposed, as it were, *in limine*, by obstruction high up in the intestinal tube, and under such circumstances, according to the above principles, we ought to have deficient secretion of urine. Let us now put this to the test of experience. In all the cases which I have met with, of constipation arising from obstruction situated in the upper part of the small intestines, and (as is common in such cases) attended with the speedy rejection of every thing taken into the stomach, the urine has been nearly if not entirely suppressed; in some instances this suppression has been so complete, as to give rise to a suspicion that the disease was in the kidneys, and not in the intestines.* Such cases present a remarkable contrast to those of constipation seated low down in the canal, as in the case of twisting of the sigmoid flexure, in which the urine is never notably deficient, and sometimes remarkably copious. In the former cases, (those of obstruction at the upper part of the alimentary canal), there is also a great deficiency in the quantity of bile.

The same deficiency in the quantity of the urine will also be found when any great impediment exists to the transit of the blood through the lungs and heart.

In the earlier stages of the granular or Bright's disease of the kidney, we have, for the most part, an abundant secretion of urine, as far as regards the quantity; the abnormal condition of that fluid

* Guy's Hospital Reports, second series vol. ii. page 384. See also Retrospect vol. xi. art. 29.

consisting in the absence of some of the solid ingredients of healthy urine, and the presence of one of the constituents of the blood. In the more advanced stage of the same disease, when the kidney has become contracted and indurated, the quantity of water excreted is defective, as well as that of the solid contents, but in both states the depuration is imperfect.

There is an important practical inference to be drawn from the above remarks, and one, too, which is confirmed by experience, namely, that when the circulation through the liver is materially impeded, those substances which are commonly administered as diuretics cannot readily pass into the general circulation, and, consequently, do not reach the kidneys in sufficient quantity to produce the effect for which they were administered; after, however, having unloaded the intestinal capillaries, which are in fact the origins of the portal vein, by means of a brisk purgative, we are often enabled to procure diuresis in cases where we should have failed without such a preliminary measure.

The above remarks are perhaps equally applicable to the obstruction to the circulation, through the lungs and heart; such obstruction being always attended with great engorgement of the liver, and consequent embarrassment of the portal circulation. The direct consequences of the derangement of the pulmonary circulation, and impediment to the function of respiration, would, however, be probably the more urgent. Finally, when the kidneys themselves are diseased, we may have the whole secretion, *i. e.* the water as well as the solid contents, retained, or we may have the water passing off by the kidneys and carrying with it some of the ingredients of the blood, the urea and other constituents of healthy urine remaining in the system. In such cases I need hardly add, that the symptoms of retained secretion are often most apparent.

Medical Gazette, Jan. 23, 1846, *p.* 156.

37.—*Inorganic Affections of the Heart.*—By O'B. Bellingham, M.D., one of the medical officers of St. Vincent's Hospital.—[There are a number of cases which simulate heart disease, where no organic alteration exists; and it is of great importance to distinguish there, since the treatment required in the one case is perfectly useless or injurious in the other.]

The conditions or states of the system under which symptoms simulating heart-disease are most liable to occur, are—

1st. States of anæmia.
2nd. The plethoric state.
3rd. Disordered states of the digestive organs.
4th. The nervous and hysterical habit.
5th. Debilitated states of the system however induced.

[With respect to the anæmic condition, Dr. O'B. Bellingham says—]

The state of the system denominated anæmia is, perhaps, more frequently than any other accompanied by symptoms simulating

disease of the heart. This term literally means the absence of blood; but as it is now understood, it includes those cases in which not only the amount of blood is diminished, but also those in which the solid constituents are deficient, and where the proportion which the watery parts bear to the red globules or fibrine is altered.

The condition of the blood in anæmia is exactly the reverse of that found in plethora; in the latter, the amount of blood in the system is greater than natural, the blood-vessels are distended, and the red globules superabound. In the other, the red globules and the fibrine, or the former only, are diminished, the amount of blood in the system is likewise less than in the normal condition, and the vessels are in an unfilled state.

The cardiac phenomena which accompany the several forms of anæmia have their origin in the unfilled state of the vessels, and in the diluted and watery condition of the blood. In order to maintain or to restore the balance of the circulation, the heart's action becomes more rapid, as the organ endeavours to make up by velocity what it wants in strength.

Plethora.—Symptoms of heart-disease may, however, be the result of a directly opposite condition of the system to that just described. In plethora, or the plethoric state, instead of a diminution of the actual amount of blood, or of one of its most important constituents the red globules, there is an increase of both. "It has been generally supposed (Andral observes) that it is the fibrine which is augmented in plethora; such, however, is not the case, it may amount to its maximum, but never exceeds it. The quantity of albumen is not augmented either, the globules are the only element increased in quantity; they are increased to the full physiological limits, and sometimes exceed it.

[In speaking of disordered states of the digestive organs producing symptoms simulating heart-disease, he alludes to disease of the abdominal organs, and believes that what is often attributed to sympathy is the result of the operation of a mechanical cause.]

Thus, in aggravated cases of dyspepsia, if the patient eats too freely, or partakes of unwholesome or indigestible food, a paroxysm of palpitation is very likely to follow, Now, we know that when the stomach is distended by food or flatus, it may interfere with the descent of the diaphragm, confine in some degree the heart's motions, and thus give rise to palpitation; if, in addition, the colon is distended by fæces or flatus, the abdominal aorta may be compressed, when the left ventricle will find a difficulty in expelling its contents; the action of the heart will be exerted in order to overcome the obstacle, and palpitation will ensue: or a distended stomach or colon might compress the ascending vena cava, the effect of which would be to diminish the amount of blood which reaches the right side of the organ, and nearly similar results would follow as are observed in cases of deficiency of blood, the action of the heart would become more rapid, and palpitation would be felt. If hepatic disease or derangement is combined with the foregoing, the venous circulation in the abdomen will be still further impeded,

embarrassed, or retarded; while the introduction into the circulation of a vitiated chyle will deteriorate the blood transmitted to the right side of the heart, and augment the cardiac irritability. In addition, we know that the heart, as well as the digestive organs, are supplied by branches from the great sympathetic, by which a chain of nervous communication is maintained between them; and as the semilunar ganglion and solar plexus lie in the immediate vicinity of the stomach, distension of this organ by food or flatus might stretch or compress the nervous branches derived from this source, and so react upon the central organ of the circulation.

Nervous and Hysterical States of the System.—Another condition of the system in which symptoms simulating heart-disease are liable to occur, is that usually known under the name of the nervous habit or temperament, sometimes more vaguely termed the irritable habit.

[Functional derangement of the heart, connected with nervous habit, is most frequently met with in the female and in the young, rather than those advanced in life.]

Dublin Medical Press, Nov. 19, 1846, *p.* 321.

38.—*Case of Hypertrophy of the Heart.*—By Dr. Croker King. [Dr. King relates of a case hypertrophy of the heart of great interest, particularly from the size of the organ, which weighed, when emptied of its contents, *forty-four ounces and a half.* In giving a description of the case, he observes,]

The paroxysm being fairly established, the appearance and position of the patient were striking, and expressed an amount of suffering which Dr. King believed to be unequalled: the head thrown back, the neck extended, the entire spine bent in a curve backwards, like an exaggerated state of opisthotonos, the arms elevated at right angles from the body, the fingers expanded and rigid, the dark and prominent eye, the marked projection of the thyroid cartilage from the forcible extension of the neck; the violent action of the heart, absolutely causing the individual to vibrate at each pulsation; the carotids bounding and throwing forward the integuments of the neck; the violent distension of the superficial arterial branches, enabling their course to be traced, in fact, so general was the arterial dilatation, that at each beat of this powerful heart, the individual appeared to undergo a general enlargement, and thus to resemble one enormous aneurism.

Coupling with the above, the expression of the patient's countenance, the suppressed breath, the perspiration, which, at first, stood in large drops on, and ran down the face and neck, the whole embodied a scene which might possibly be depicted with the pencil, but defies the pen.

These paroxysms were induced by the slightest circumstance; a cause which from its unimportance, could scarcely be considered capable of producing the slightest mental disturbance, being capa-

ble of giving rise to them. Such as receiving a visit from even his most intimate friend; at one time drinking, at another eating, appeared to be an exciting cause; and so much did this unfortunate gentleman dread the occurrence of a paroxysm, that I have known him to remain for several days without food, dreading the consequence of taking it. The paroxysms could frequently be warded off by occupying his mind, with any circumstance calculated to fix his attention, and over and over again have I succeeded in doing so by such a stratagem.

All through this case the most marked relief was experienced from stimulants, narcotics and antispasmodics: whereas any treatment calculated to reduce or depress was injurious, and appeared to favour the frequent recurrence of the attacks. So great was the relief experienced by the patient from the use of stimulants, that some years ago, without any pleasure in intemperance, or wish to indulge in intoxicating liquors, he gradually increased his potations to sixteen or eighteen tumblers of punch daily: however, he soon became sensible of the injurious effects of so much alcohol on the system: an attack of delirium tremens determined him to abandon such habits at all risks. He accordingly substituted opium, the dose of which he was equally anxious to limit, which, with some exertion, he kept down to one ounce and a half of the tincture daily; the other preparations, the acetum, black drops, or the salts of morphia, had not the same effect as the laudanum; the doses should be larger in proportion, and even then, on account of the absence of the spirit, they were not as efficacious.

It is worthy of remark that during the entire progress of the above case, there was no evidence of interrupted circulation, no *dyspnœa*, no venous or capillary congestion; anasarca certainly set in towards the close of the case; it had not extended above the hips.

Dublin Hospital Gazette, Jan. 1, 1846, *p* 154.

39.—*On a Systolic Murmur in the Pulmonary Artery.*—By Dr. Ormerod, Demonstrator of Anatomy at St. Bartholomew's Hospital.—[From a series of cases published by Dr. Ormerod on this subject,]

The following inferences seem naturally to arise. First, that a murmur may be heard in the pulmonary artery in many cases of anæmia and its kindred maladies, as also in acute rheumatism, which murmur, there are good reasons for concluding, not to arise from organic disease, as well on account of the variable nature of the murmur itself, as most conclusively on account of the rarity of disease of the pulmonary valves.

The second inference is, that the existence of a murmur in the pulmonary artery gives grounds, in some cases, for presuming that murmurs audible elsewhere in the same heart will disappear; in fact, that they do not depend on organic lesion of the valves to which they are referred. This statement will need a little farther exposition. And, first, as to the cause of murmurs generally.

If they are not owing to organic changes, to what are they to be referred?

Whatever be the cause of the murmur being produced, the way in which the cause acts is by setting the blood in a state of vibration. The tones thus produced, whether in the blood-vessels or the blood itself, constitute, in all its varieties, what we call a murmur. And just as a wire may be fixed so as to vibrate on the least impulse, and continue long in that state of vibration, or to require a strong and frequently-repeated impulse to establish and maintain that state; so is it with fluids, and, what concerns us more immediately here, with the blood. The mere propulsion of this fluid from the ventricles into the large vessels, and its movement along the vessels, arteries, or veins, may suffice in some cases to set it in vibration,—to produce, in fact, a murmur. And this happens, as well shown by Andral, especially in those cases where the blood is of extreme tenuity. In other cases the blood requires more violent disturbance to throw it into vibration, such as is effected by the projection of a rigid valve into the stream, or by the sudden regurgitation of part of the stream, as in the case of imperfect closure of the aortic valves. Here, then, are the two cases;– the attenuated blood vibrating from a common cause, insufficient to affect healthy blood; and blood of a normal density vibrating from a superadded cause.

Insisting on the fact of the pulmonary valves being generally free from disease, murmurs referred to this situation must be explained on some other supposition than that of structural change. On the exact mode of production of this vibration there is no space here to speculate. The peculiar theory which any one may advocate is a step anterior to that with which we would commence, viz., the audible effect of these causes, whatever they may be assumed to be. We may suppose the ventricle to be contracting with unusual force, with unusual rapidity, to be temporarily, (for the variable nature of the murmur will not let us suppose it permanently) dilated, or affected in any way so as to throw the blood into greater vibration; or the blood itself may, by its tenuity, be more susceptible of vibration. There may be any cause but permanent structural change in action.

But before applying these conclusions to the other orifices of the heart, we must again refer to the table of cases, for we can apply them safely only under certain restrictions. It has been already noticed that the murmurs did not begin at the same time at all the situations at which it was eventually audible. In the majority the murmur began at the same time in more than one situation, and so far this is favourable. For if a murmur arises in any part of the heart, except at the pulmonary orifice, during acute rheumatism, and subsequently a murmur appears at this latter situation, we must look on that case in a less favourable point of view than what we would on a case in which they were all developed simultaneously; and this will be the more necessary, if, in addition to the attenuating effects of rheumatism on the blood, (which reduces its solids in

the same way, though not to so great an extent, on the average, as does chlorosis),* venesection, which produces analogous effects on this fluid, have been employed.

With this restriction we may apply what has been said of the pulmonary orifice, to the other orifices of the heart. It is *possible* that the murmurs heard in other parts of the cardiac region may have their origin in the same or similar functional disturbances in which it is *probable*, nay, almost certain, that the murmurs of the pulmonary artery take theirs. On this question, or recurring to the words of our second inference, what grounds there are for presuming that a murmur co-existent with one in, but referred to any other situation than, the pulmonary artery, may ultimately disappear. the above tables may throw some light.

It is true that of the first sixteen cases only seven had all the murmurs fairly watched out, (the phrase accurately expresses the process), but in the whole of them changes were witnessed in the murmurs, and chiefly in those murmurs which, judging from their situation, were less likely to prove of a functional origin than those in the pulmonary artery. Let us look at the recorded auscultations of any cases which have been watched for a considerable time till death has given an opportunity of confirming the diagnosis of valvular disease. The murmur on which the diagnosis was founded may have varied in intensity, it may have varied in character, from a musical have become a blowing sound, or the reverse, but it will never be found that it varied in situation. It may perhaps have been inaudible in its own situation, owing to a tranquil state of the circulation, but never will it be found to have left its own, and taken up, so to say, a new position.

It cannot be too strongly urged, for on this fact all the practice of auscultation is based, that each valve is a distinct centre of disease, and that the signs of the disease of each valve show themselves at particular places. If a murmur is heard one day at the apex, another day at the base, and another not at all, or perhaps at both places, clearly, considered in themselves, these murmurs are to be looked upon in quite a different light from one which is always referred to the same situation. May be they are all alike functional, but they cannot all depend on structural changes of the valves. Such can only be the case with the stationary murmur. And if, of these variable murmurs, one may be exchanged for another, why may not both be simultaneously removed? And if, of more murmurs than one in the same heart, one be manifested in the pulmonary artery, and be almost to a certainty independent of structural change; is it not at least possible that the murmur at the apex, or that in the aorta may be produced by the same or

* Simon, Medizinischen Chemie, ii. 175, 208.

	Solids.	Fluid.
Healthy standard, . . .	210	790
Rheumatic blood, average, . .	194	805
Chlorotic, do. do. . . .	172	827

a similar cause to that in the pulmonary artery. The existence of a murmur in this artery shows that there is a cause in operation, independent of organic disease, sufficient to produce a murmur, and gives *some* grounds for presuming a functional origin even of such murmurs as have not yet by their variations already declared the nature of the cause which has produced them.

Edinburgh Medical and Surgical Journal, Jan. 1846, *p.* 107.

ORGANS OF RESPIRATION.

40.—BLACK PHTHISIS IN COAL MINERS.

By A. Makellar, M.D.

[In our last Volume, XII., Art. 30 and 31 will be found some interesting papers by Guillot, Makellar, and Brockmann, on this subject. The following article is a continuation of that by Dr. Makellar, who relates ten cases of the disease, among others, which occurred to him. We will confine our extracts chiefly to those parts of the paper which are illustrative of this particular carbonaceous deposition.]

These cases extend over a period of eleven years, all of them exhibiting, with some slight variation, the same character of disease, and proceeding from the same cause—inhalation of carbonaceous matter. Some of the cases occurred as far back as the years 1833-34,, while the last case came under my notice within these twelve months. Of the ten patients, six were engaged at one period with stone-mining, and four were entirely coal-miners; eight expectorated carbonaceous matter, and two did not show any indication of black infiltration from the sputum; six exhibited most extensive excavations of the pulmonary structure; and only three general impaction of these tissues, with numerous small cysts containing black fluid; the tenth, I regret to say, was not examined, owing to neglect in communicating in time the death of the patient, which took place a few weeks ago. These morbid appearances exhibit three stages of the disease. The first is that where the carbon is confined to the interlobular cellular tissue, and minute air-cells, producing cough, dyspnœa, slight palpitation of the heart, and acceleration of pulse, while, at the same time, the patient continues able to prosecute his daily employment. The respiratory sounds, in this state of the chest, are loud and distinct. Such a condition of the pulmonary structure is often found on examination in the Carron *iron-moulder*, who has been killed by accident, or has died from some other disease, having been subjected in the course of his employment to the inhalation of carbonaceous particles.

The second is that stage where the softening has commenced, the several impacted pulmonary lobular-formed small cysts throughout the substance of one or more lobes, the contents of which may either be expectorated or remain encysted, giving rise to most harassing cough, laborious breathing, and palpitations, dull resonance of chest, and obscure respiratory murmur. The third and last stage, is that in which the several cysts in one or more lobes have approximated each other, forming extensive excavations, the prominent symptoms of the disease becoming considerably aggravated, and the powers of the system sinking to the lowest degree of exhaustion.

[The first case, George Davidson, aged 32 years, first seen in May, 1834, when he was labouring under bronchial affection, but continued in his employment as a stone miner in a coal-pit for more than two years, when he was obliged to desist, from general debility. At this time he expectorated bloody tough mucus, without any tinge of black matter. Whilst under treatment the cough increased, night sweats came on, the pulse became weak, and he was emaciating rapidly; when during a paroxysm of the cough, black sputa made its appearance, which relieved him for some time. Dr. Makellar observes:]

During the greater part of the period he was under my charge, he continued to expectorate black matter, of the consistency of treacle, mixed with mucus in considerable quantity, and I would suppose, taking the average of each week, that he expectorated from ten to twelve ounces daily of treacle-like matter. I had the curiosity, during my attendance on this patient, to separate the mucus from the carbon, by the simple process of diluting the sputa with water, and thereafter separating and drying the precipitated carbon. I was enabled by this means to procure about one and a-half drachms of a beautiful black powder daily, and in the course of a week, I had collected near to two ounces of the substance. This process I continued for some weeks, till such time as I had procured a sufficient stock of this remarkable product of the pulmonary structure, and I am certain that the same quantity, if not more, could have been obtained till his death, in December, 1836. It is undoubtedly a striking phenomenon, connected with the pathology of the chest, that the human lung can be converted into a manufactory of lamp black!

This case resembled in many of its features, one of tubercular phthisis, more than is generally found in the disease before us, there being cough and expectoration, dyspnœa, sharp pain in the thoracic region, colliquative sweats, and great emaciation, while, at the same time, the pulse was slow and weak, not exceeding thirty-six in the minute for a week before death. No hectic heat of skin, but an extraordinary depression of the arterial action, arising evidently from the redundancy of carbon deposited in the pulmonary tissue, preventing the proper oxygenation of the blood circulating in the organs, and thereby producing a morbid effect on

the whole system, which sufficiently explains the cachectic condition of the body.

Post mortem examination twenty-four hours after death.—The lungs were removed with difficulty on account of the strongly adhesive bands attaching them to the ribs, and in handling them they conveyed the impression of partial solidity:—several projecting, irregular firm bodies, were felt immediately beneath the surface of the pleura, and there was also present emphysematous inflation of the margins of the upper lobes. In transecting the upper lobe of the left lung, it was found considerably hollowed out, (to the degree of holding a large orange,) and containing a small quantity of semi-fluid carbon, resembling thick blacking, with the superior divisions of the left bronchus opening abruptly into it. Many large blood-vessels crossed from one side of the cavity to the other, to which shreds of parenchymatous substances were attached. The inferior lobe was fully saturated with the thick black fluid, and it felt solid under the knife, and several small cysts containing the carbon in a more fluid state were dispersed throughout its substance, in which minute bronchial branches terminated, and by which this fluid was conveyed to the upper lobe, and thence to the trachea. In examining the right lung, the upper, and part of the middle lobe were pervious to air, and carried on, though defectively, the function of respiration, while the interlobular cellular tissue contained the infiltrated carbon. The inferior portion of the middle and almost the whole of the under lobe were densely impacted, so that on a small portion being detached, it sank in water. Both lungs represented, in fact, a mass of moist soot, and how almost any blood could be brought under the influence of the oxygen, and the vital principle be so long maintained in a state of such disorganization, is a question of difficult solution.

In tracing the various divisions of the bronchi, particularly in the inferior lobes, some of the considerable branches were found completely plugged up with solid carbon; and in prosecuting the investigation still farther, with the aid of a powerful magnifier, the smaller twigs, with the more minute structure of cells, were ascertained to contain the same substance, forming the most perfect *racemes*, some of them extending to the surface of the lung, and to be felt through the pleura.

Case 2nd was one of unsuspected carbonaceous accumulation in the lungs, the history of which proves the fact, that the disease, when once established in the pulmonary structure, continues to advance till it effects the destruction of the organs, although the patient has not been engaged in any mining operations for many years previous to his death.

Post-mortem examination.—On removing the left lung, which was difficult, from the strong adhesive bands, it seemed, from its weight and softness, to contain a fluid; and on making a longitudinal section of both lobes, a large quantity of thick, black matter, similar to black paint, gushed from the opening, exposing an almost excavated interior of both lobes. The carbonaceous

matter contained was in quantity about an English pint, and the lung, when emptied, became quite flaccid, and very light.

On examining more minutely with the magnifier, open-mouthed bronchial twigs, and very small blood-vessels, were seen plugged up with solid and fluid carbon, and, from the appearance of the morbid structure, it was manifest, that the ulcerative process had effected a complete disorganization of the *bronchial* tubes of every calibre, while the smaller *arterial* vessels had alone suffered, leaving the larger ones entire.

On examining the right lung, which seemed much similar in weight to the left, and on making a section throughout its three lobes, the morbid appearances varied in each. The upper lobe was infiltrated with carbon into the interlobular cellular tissue, leaving the bronchial ramifications respirable, and lubricated with frothy mucus. The middle lobe presented a solid appearance, and contained a mass of indurated black matter, of the size of a largish apple, and consistency of consolidated blacking. The surrounding parenchymatous substance was disorganized, and undergoing the process of softening.

[The foregoing remarks will, in some measure, show the nature of these extraordinary cases.]

The third case comes under the second division of this disease, where the irritative process resulting from the foreign body pervading the lungs, had advanced so far as to produce a variety of small cysts, and circumscribed indurated masses, the former containing *fluid*, and the latter *solid* carbon, and it is evident in tracing its progress, that there must have been a very rapid increase within the system in the carbon originally deposited in the pulmonary structure by inhalation. There was very limited black expectoration shortly before death, and this merely the contents of a few small cavities communicating with the bronchial ramifications, while both lungs were extensively infiltrated with that matter which, had the patient lived, would have produced general softening, and more extensive excavations by the coalition of the various indurated lobulæ.

In the fourth case it is evident, from the symptoms and history, that the patient had contracted the disease of which he died at an early period of his life, and that during the fifteen years he refrained from mining operations, the pulmonary structure retained the carbon inhaled while labouring in the coal-pit, and this is one of the many cases which can be produced as examples of the fact, that the foreign matter once deposited in that structure originates a process of accumulative impaction and ultimate softening of the organ, which is gradually carried on till it is entirely disorganized. This case comes under the third division of the morbid action, viz., where extensive excavation of the structure is produced.

The seventh case is remarkable from the length of time (twenty years or more) that the carbon was concealed within the pulmonary tissue, and also because he had never been engaged as a stone-miner; so that this case, along with others, illustrates the fact,

that where the morbid action is the result of lamp-smoke, from the combustion of coarse oil, and not gunpowder-smoke, the disease is much slower in its progress, but ultimately fatal.

[We consider these cases altogether remarkable, and exceedingly well told; and for further information we would strongly advise the reader to turn to the original papers.]

Monthly Journal of Medical Science, Nov, 1845, *p.* 818.

[From these cases there is no doubt that *black phthisis* is the result of the inhalation and retention of foreign substances in the structure of the lungs. In another paper communicated by Dr. Makellar, he observes:]

While engaged in committing these remarks to paper, I have been led in my investigations to compare the various kinds of labour carried on in coal-pits with the under-ground operations of many of the railways now in progress throughout the kingdom; and being convinced of the very injurious effects produced upon miners while prosecuting these operations in confined situations where gunpowder is used, I shall be much surprised if the same results do not follow the hazardous undertakings connected with railway tunnelling, where gunpowder is had recourse to, and in the course of years find in our public hospitals cases of carbonaceous lung arising from this cause.

[From the whole of his experience in these cases, Dr. M. draws the following conclusions:]

1st, The black matter found in the lungs is not a secretion, but comes from without. The *pigmentum nigrum* of the ox I find to lose its colour entirely, and to leave only a quantity of white flocks, when rubbed in a mortar with chlorine water. Sepia, which is a preparation of the dark-coloured liquor of the cuttle-fish, was also bleached by chlorine, but the black matter of the lungs was not destroyed or bleached in the slightest degree by chlorine; it even survived unimpaired the destruction of the lungs by putrefaction in air.

2nd, This foreign matter probably varies in composition in different lungs, but in the cases actually examined, it seems to be little else than lamp black or soot.

It does not appear, as far as I can ascertain, that any of the continental physiologists are familiar with the disease now under our consideration. Several of them, both ancient and modern, discovered black matter in the pulmonary tissues, but not connected with nor exhibiting the black phthisis.

I have long entertained the belief, that if the carbon is once conveyed into, and established in the parenchyma of the lungs, that organ commences the formation of carbon; thus increasing the amount originally deposited.

With regard to medical treatment, little can be done after the disease has passed its first stage. Early removal from the occupa-

tion, and proper attention to nutrition, alone seem to hold out the hope of prolonging the life of the patient; but if there be carbon lodged in the pulmonary tissues, there is a certainty of its sooner or later proving fatal. Attention to the state of the digestive organs, and using every means to remove the dyspeptic symptoms, which are prominently present throughout the various stages of this disease, are indispensably requisite; and, as to nutrition, the nature of the diet should be as generous as possible. Anodynes and expectorants are the only remedies which seem at all efficacious in allaying irritation.

With a view to remove urgent symptoms, venesection has repeatedly been had recourse to, but in almost all instances I would say, with decidedly bad effects. Blood-letting does harm, producing general debility and rapid sinking.

Monthly Journal of Medical Science, Feb., 1846, *p.* 91.

41.—*Phthisis Antagonized by Disease of the Liver.*—By M. Catteloup.—[In the post-mortem examinations instituted by M. Catteloup, in Algeria, he seldom found tubercular deposit in the lung coincident with hepatitis, or its results; and in one pathological condition of the liver—*fatty degeneration*—very common in the liver of dysenteric patients, who had exhibited marked symptoms of phthisis, he was much struck at the entire absence of tubercle. He says,]

In the course of our researches we have remarked the frequency of a change of structure in subjects, who, offering every appearance of phthisis, yet were quite exempt from tubercle—I mean the yellow-looking and fatty liver. Every one is aware of the rarity of tubercles in Africa. Can it be that they are replaced by a morbid condition of the liver whose frequency is almost as great relatively to other affections, as is that of pulmonary tubercles compared to other diseases in France. Do the modifiers of the animal economy in Algeria possess the power of destroying in the *thoracic* lung the disposition to contract this pathological condition, but at the expense of its production in the *abdominal* lung? In France, the coincidence of the fatty liver and phthisis is frequently observed: in Algeria, this morbid condition is observed alone, no disease existing in the lung.

The rarity of the prevalence of pulmonary phthisis in Algeria may be judged of by the fact, that M. Haspel, in 1841, only found three persons affected with it out of 1480 hospital patients; and only one of 138 deaths was caused by it. So, in 1842, in all the hospital establishments of Algeria, of 8485 patients there were but thirteen phthisical; and but 10 out of 871 deaths occurred from phthisis!

Medico-Chirurgical Review, Jan. 1846, *p.* 67.

42.—*Infrequency of Phthisis in Marshy Countries.*—[In Retrospect, Vol. IX., Art. 44, there is a notice of a letter read before the Academy of Medicine, addressed to the president, by M. Nepple,

on the infrequency of phthisis in marshy districts, confirming what Brera said some years ago on the infrequency of phthisis in Venice. M. Ollivier remarked that there were not more than seven or eight phthisical patients among twelve or fourteen hundred annually admitted into the hospitals of the town; the rest were affected with intermittent fever, or rheumatism. Dr. Antonio Salvagnoli Marchetti, in an essay illustrating the tables of the medical statistics of the Tuscan Maremma, noticed in the *British and Foreign Medical Review*, for January, 1846, corroborates the same fact; it appears that of 81,731 sick, there were only 100 cases of phthisis, or 1 to every 817. According to Broussais, in Algiers, where intermittents prevail, of 40,000 sick in the French army, only 62 were phthisical, that is 1 to every 650 sick, and 1 death to 102 from other causes. In France, there is one to five from other causes, whilst in England the mortality from phthisis is a sixth part of the whole community.

Dr. Forbes remarks, that all these conclusions are vitiated by the fact that the observations only apply to *overt* or *confirmed* disease, *post-mortem* examinations not being *general;* whereas tubercles may have existed in those dying of fever, without being detected. Moreover, where so many are carried off in early life by fever, it is to be inferred that some might have had phthisis had they lived.]

British and Foreign Medical Review, Jan., 1846, *p.* 210.

43.—*Pulmonary Affections caused by Dyspeptic Derangements.* —[Dr. Prout makes the following observation in speaking of the manner in which protracted derangement of the assimilative organs may induce pulmonary disease.]

The imperfectly assimilated chyle, in passing through the lacteal system, either does not undergo the necessary changes by which chyle is converted into blood; or is malconverted into the comparatively insoluble pseudo-albuminous matter of struma, which in passing through the lungs, lays the foundation, perhaps at first mechanically, of tuberculous deposition and future accretion.

Dr. Dick's Papers, Medical Gazette, Feb. 20, 1846, *p.* 327.

44.—*On Paracentesis Thoracis.*—By H. M. Hughes, M.D., Assistant Physician to Guy's Hospital.—[Pleuritic effusion, without very careful examination, is very liable to be mistaken; its progress is often so insidious, and its symptoms so latent, it may, and frequently is, confounded with consumption, liver disease, or indigestion. Whatever merit is due to the proposer of the operation, whoever he may be, it is the late Dr. Thomas Davis, who merits the praise of pointing out how the function of the lung may be restored and deformity prevented. In 1844, a paper was published in *Guy's Hospital Reports* by Mr. Cock and Dr. Hughes on this subject, and very soon after a paper was read before the Medico-Chirurgical Society, by Dr. Rowe, in which the operation was

recommended for the same purposes. Dr. Davis was in the habit of leaving a piece of elastic catheter with a stopper in the wound, and drawing off a little fluid daily, but Dr. Rowe and Mr. Cock immediately close the wound and repeat the operation as often as is necessary. Mr. Cock and Dr. Hughes believe that the admission of air into the pleural sac is injurious, while Drs. Davis and Rowe assert that it is not attended with any bad consequences: the former assert that the admission of air keeps up the compression, to some extent, on the lung, which it is the intention of the operation to obviate. Dr. Hughes observes,]

It is with a view of withdrawing the fluid before firm adhesions have been formed, before the lung has been strongly bound down, and plastered over with a thick coating of fibrin or albuminous matter, that the operation has been recently recommended, in contradistinction to that of merely relieving urgent distress or of preventing suffocation. Until a comparatively recent period the operation, simple as it is, and harmless as it has been proved to be, had not been performed until almost every other mode of relieving the patient had been tried without effect, and the powers of the patient had become greatly exhausted. Hence it happened that the operation was not only generally unsuccessful, but was considered an affair of much importance, and of considerable danger. If operations for other complaints had been thus unreasonably delayed—if that for hernia, for example, had been almost uniformly deferred till gangrene had taken place, it may be fairly assumed that surgeons would not have had so many cases of that disease to point out as triumphs of their art.

I have never seen a single case in which, when it was performed in the manner recommended by Mr. Cock and myself, it was attended with the slightest risk, though in an earlier period of our practice I know that a case occurred in which the individual fainted, and was affected with alarming collapse, in consequence of the fluid been drawn off too rapidly through a large canula; and though one person certainly contracted an attack of bronchitis, followed by pneumonia, from exposure during operation, I believe that in most persons the "risk" of the operation is not greater, and that in many persons it is really not so great, as the risk of a prolonged mercurial course.

"That the admission of air may rekindle the inflammation" we believe, and "that its admission may convert the adhesive into the suppurative inflammation" we also believe; but we are very far from thinking that "its admission cannot be prevented." It is, indeed, a rare circumstance with us for a single bubble of air to enter the pleura—though two, three, or four pints of fluid have been withdrawn; and though in many cases the operation has been performed several times, and in one case as many as thirteen or fourteen times. In this individual air did, on two occasions, enter the pleura during the act of coughing or a sudden involuntary gasp. Air is there still, and has remained there ever since: we are, indeed, far from being certain that in this individual there may not have been

a very minute communication with one or more bronchial tubes, but we have never had any evidence of the air having been absorbed, and the patient's own strong impression is, that since it first entered it has never been removed. The fluid in this case remains perfectly inodorous.

The reason why air does not necessarily enter the pleura, and the mode in which, with proper care, it can be prevented doing so, are both, I think, sufficiently evident. Unless the lung is capable of full and free expansion we do not attempt to draw off all the effused fluid. We remove, indeed, only so much as the expanding lung and the surrounding compressed organs are capable of replacing. The opening is carefully watched, particularly during the act of inspiration and of coughing; and when the stream begins to fail the body is turned towards the punctured side, till there is at length an alternate flow and stoppage of the stream during the acts of expiration and inspiration. When this occurs we withdraw the canula—when, in fact, there exists a tendency for the external air to enter the cavity, that tendency is at once stopped by closing the aperture. Sometimes it is true that a considerable portion of fluid is thus left behind.

This remaining fluid, if not absorbed, must be removed by a second operation, which is so slightly painful, and when properly and carefully performed, is so simple, and is usaally the means of affording such great comfort, that I have never known a patient object to it who had once gone through the ordeal.

[On compression of the parietes of the chest and abdomen, Dr. H. says,]

Now, from having observed that an attack of coughing has often followed the exercise of this process, in consequence, as we presume, of the greater expansion of the lung which is thereby induced, we now believe, that this part of the directions may be advantageously omitted, and that it is better to take away only so much of the liquid as flows spontaneously by inclining the body. Secondly, with the view of preventing cough, arising from the too sudden expansion of the lung, and of allowing the organ gradually to accommodate itself to the enlarged space, we are now in the habit of applying a flannel bandage with moderate firmness around the chest, after the operation is completed. In reference to the operation itself I have been accustomed to prescribe to myself certain rules and precautions, which may be, perhaps, advantageously here introduced for the direction of those who are not accustomed to see it performed:—

1.—It is well never to propose it without having previously inquired into the history of the case, and minutely investigating the general symptoms, as well as carefully ascertaining the physical signs.

2.—After this has been effected, and all the ordinary means of diagnosis have been fairly and fully brought into requisition, the trochar should never be introduced before the exploring-needle has

been employed for the purpose of confirming the correctness of the diagnosis previously made.

3.—The puncture of one side of the chest, excepting under circumstances of imminent danger, should never be made before it has been clearly ascertained that the lung of the opposite side of the chest, if not quite free from disease, is at least capable of carrying on the respiration.

4.—The fluid should be drawn off slowly through a small-sized canula, if the effusion is thin and serous, and through one of rather larger size if the fluid is thick and purulent.

5.—So much only of the fluid should be withdrawn as flows spontaneously without the admission of air.

6.—The escape of the fluid should be favoured by an inclination of the body towards the punctured side.

7.—It is desirable after the operation to support the chest with a moderately tight flannel bandage, to keep the patient in bed and desire him not to talk for a period of twenty-four hours; after which, *if his complaint would not on other accounts confine him to his bed*, he may leave it without inconvenience or danger.

With these rules or precautions the operation may be performed, in very many cases, with great benefit; and in all cases, as far as I am able to judge, from a pretty extensive opportunity of observing its effects, without danger.

Medical Gazette, Feb. 13, 1846, *p.* 281.

45.—*On the Treatment of Bronchitis in Infants.*—By C. M. Miller, Esq., Stoke Newington, London.—If the bronchitic affection is very severe, a warm bath, and of calomel, one grain, powder of ipecacuanha, two grains, with a little compound tragacanth powder, every four hours; if less severe, three times a-day, and lengthen the time as the patient improves. Many will say this will act as an emetic; it does for the first or second dose, but not afterwards. If the disease does not yield a little on the first day, I generally apply one, or at the most, two leeches to the hollow of the neck above the sternum. Out of some dozens of cases which I have this year treated on this plan, I have not lost one, nor have I had occasion to apply any escharotic in a single instance; and although I am now limiting myself to the last twelvemonth, yet my success has been nearly equal for some years past. Nothing is to be feared from the effects of the calomel, unless profuse diarrhœa should supervene, and then, of course, it must be remitted; but I have rarely seen this until the virulence of the disease had been subdued. Now, then, for my plan of blistering. I believe I am not the only one who has seen the ill effects of a blister on an infant, and many, I dare say, have said they never would apply a blistering plaster again to a child. I say to such, you may do it, and with safety too, if you will place between the blistering plaster and the child's skin a piece of tissue paper; the blister will do its duty well, and you will have nothing to annoy you; or if you still

feel timid of trying this, dip a piece of blotting-paper, the size you require, into acetum cantharidis, and by applying it to the part, in 10 or 15 minutes you will have a safe blister raised. This I have found an admirable plan where the effect is required quickly; indeed, I remember one case of croup where the vital powers were failing, in which it had a very good effect.

Lancet, Dec. 27, 1845, p. 703.

46.—*Internal Use of Cantharides in Pneumonia.*—By Dr. Mendini. The author does not give this remedy as a certain specific in pneumonia, nor as applicable to all the varieties of the disease, nor as capable of taking the place of all other therapeutic agents. On the contrary, he distinctly warns us, that the administration of cantharides does not supersede the necessity of bleeding. In some of his patients, he had had recourse to bleeding four, six, and even ten times. He also observes, that cantharides only succeeds when the affection is of a decidedly inflammatory character, the constitution plethoric, and the general reaction well marked. In cases where the case is complicated with the gastro-enteritis, or marked susceptibility of the primæ viæ, the remedy is contra-indicated.

In what particular way does cantharides act in pneumonia? Dr. Mendini believes its action to be absolutely the same with that of tartar emetic; that is to say, it depresses and moderates the circulation. He does not hesitate to state, that the power of antimony in this respect is even less marked than that of cantharides. "I have often," he says, "been obliged to suspend the use of cantharides, owing to its hyposthenic effect proving too powerful; at times, indeed, I have been obliged to combat this effect by means of stimuli, such as laudanum combined with the tincture of canella. But I have rarely been obliged to have recourse to similar precautions when using the tartar-emetic.

Dr. Mendini has now tried cantharides in seventy cases of pneumonia, and that in a country where the inflammatory element is in such activity as to render repeated bleedings necessary to overcome the disease. In not one of the cases did the peculiar effect of cantharides on the urinary organs prevent the continuance of the remedy. The pain and heat experienced by the patient at first in the genitals, disappeared in the course of forty-eight hours, and priapism never lasted longer than the third or fourth day. The author never witnessed these symptoms continue, in any of his patients, beyond the period first stated, although the ordinary dose of the remedy was continued. He generally found it of advantage, he says, for the first few days, to assure the patients that the inconveniences they suffered in the region of the pelvis, were the mere effects of the disease, which, descending, was taking leave of the body in that way! The following is the general mode in which Dr. Mendini administered the remedy:—

Take of whole cantharides from twelve to eighteen grains; boil

in half a pound of water, so as to make an infusion; to which add a pound of almond emulsion, and half a pound of mucilage.

This is to be taken at intervals in the course of twenty-four hours.

However great may be the confidence which both the name of the author, and the utter want of any thing exaggerative in his statements, inspire us with, we very much doubt, if many practitioners will follow in his steps, in the treatment of a disease against which we already have a sufficiency of means, as certain as they are inoffensive. Even that which appears to Dr. Mendini an argument in favour of the remedy,—viz., that its too great efficacy will cause it to be proscribed,—only inspires us with mistrust. We only add, and we do so most emphatically, if any one feels inclined to hazard this treatment, he must,—unless under a heavy responsibility,—commence with doses much smaller than those indicated by the author; and he must attentively watch the development of any symptoms in the genito-urinary organs.—*Annali Universali di Medicina*, as quoted in *Gazette Medicale*, January, 1846.

Monthly Journal of Medical Science, Feb. 1846, *p.* 123.

47.—*Ammonia in Asthma.*—[M. Guérard has used ammonia with success in a hundred cases of asthma. The editor of the *Annales de Therapeutique* saw him apply it to an old woman almost suffocating, in consequence of pulmonary emphysema—the relief was instantaneous. It is not necessary here to particularise the method adopted by M. Guérard in applying the ammonia, as we should be afraid of recommending it to be tried; and particularly as we think he is mistaken in his explanation of its *modus operandi.* We should rather adopt the views of the French editor, which we subjoin.]

M. G. applies the remedy in the following manner:—He dips a small pencil of charpie into pure liquid ammonia, and then instantaneously into a glass of water, after which he immediately passes it to the back of the throat, touching rapidly the velum, uvula, and œsophagus to a greater or less extent. He seldom has occasion to repeat the operation; when there is merely simple emphysema the improvement has been permanent. The pencil should be neither carried too deeply into the throat, nor allowed to remain too long in contact with the soft parts, more especially the posterior wall of the pharynx; the reaction resulting from such an application is, at times, followed by the most frightful symptoms, menacing instant death.

[The editor proceeds to state that]

Three questions naturally arise from the preceding facts. First, In what cases of asthma may ammonia be prescribed with advantage, and in what cases is it hurtful, or of no use at all? Second, What is the true principle of action of the remedy in such cases? and Third, Is it indispensable to apply the ammonia to the throat in order to obtain its good effects?

From daily observation, it is evident that asthma frequently occurs in a state of complication with organic lesions of the heart, and aorta, or with tubercles; at other times, it exists without these complications, although otherwise accompanied with emphysema or catarrh. In the latter case, the disease may be denominated simple, the catarrh and emphysema being regarded as symptoms of the affection. From what we have observed at *La Charité*, it appears that it is only in cases of the latter description, that is to say, simple asthma, (idiopathic of authors) that ammonia effects a cure, or affords great relief.

In regard to the second question, as previously remarked, we can only regard the result produced by the ammonia, as a dynamic effect acting immediately on the diseased organ, an action analogous to that obtained by Scarpa from the same remedy, in congestive amaurosis. And the proof that its action is dynamic, and neither mechanical nor nervous, is just this, that if any other irritating remedy, the actual cautery, for instance, boiling alcohol, tincture of canella, or cloth steeped in hot wine, the same results will not be obtained; far from that, the disease will be aggravated. Two things, moreover, must be considered regarding the medication in question, and these are,—its physico-chemical and local action, which is evidently irritant, and its dynamic action, resulting from the speedy absorption of the ammonia by the bronchia, which it reaches with the air. The first of these is unimportant in a therapeutic point of view; it is inconvenient, and would certainly be hurtful, were it not counteracted by the dynamic action, affecting not only the lungs, but the whole system. What, then, is the nature of the dynamic action of the ammonia? From the effects we have witnessed in asthma and congestive amaurosis, we have no doubt that it is hyposthenic. In one or other case you have a humoral evacuation, (mucus, tears), and afterwards, results similar to those produced by other hyposthenic remedies. If, instead of ammonia, boiling alcohol be used, you will likewise have humoral evacuation, but the disease is increased. From what has been said then, it follows, that the direct application of the ammonia to the pharynx is not indispensably necessary, in order to obtain all the good expected from it in asthma, its absorption by the stomach will lead to the same results, if it be administered in sufficient doses. M. Rayer has already obtained good effects from it in this way, but the dose being too small, they have not been permanent. The remedy must, therefore, be given in sufficient quantity, through other absorbing media, not excluding the respiratory organs themselves, by placing a phial filled with the medicine near the nostrils, or disseminating it through the air; the rectum, skin, and stomach, may conjointly be made the means of repeatedly administering the remedy. It is well known, for instance, that belladonna applied to the neighbourhood of the orbit, causes dilatation of the pupil, produces its hyposthenic effect upon the globe of the eye and the brain, exactly in the same way as if it had been administered by the rectum, stomach, friction over the ex-

tremities, or injected into the bronchia. Ammonia forms no exception to this general law of effects produced by absorption.—*Annales de Therapeutique*, Nov. 1845.

[If the reader will turn to Art. 67, Retrospect, Vol. XII., he will find a good hint by Mr. Hicks, of Southwark, taken from Mr. Taylor, respecting the inhalation of the fumes of ammonia in poisoning by prussic acid, when the patient cannot swallow. The same remedy may also be used in asphyxia, and in many other cases where its influence is required in the lungs, as for example, in cases of chronic pneumonia and bronchitis, where the parts will often be benefited by its stimulation. In cases, too, where the voice is almost lost, we have found that the fumes of ammonia have acted most beneficially, even when, probably, at the same time we were giving tartar emetic.]

Monthly Journal of Medical Science, Feb., 1846, *p.* 125.

48.—*Practical Remarks on the Treatment of Cynanche.*—By C. T. Makin, Esq., M.D.—[Dr. Makin has for some time adopted a certain method of treatment in all cases of cynanche, and speaks very highly of its results. The plan is not generally known, and we here give it in his own words:]

Free incisions of the tumefied parts within the throat, I have never yet seen fail of giving *instant* relief. I do not mean mere scratches, but one or more bold incisions, varying in depth and extent, according to the urgency of symptom and tumefaction of structure.

The operation, if it can be called such, is easily performed by any one possessed of the average amount of dexterity. The following will, I believe, be found the easiest method:—The blade of a long-handled, round-pointed scalpel is covered with adhesive plaster to within three-quarters of an inch of its extremity. The index finger of one hand is used to depress the root of the tongue, (this must be done firmly, as the tonsil frequently swells most in a downward direction, causing dysphagia to a greater degree than if alone increased by swelling in the transverse diameter.) The instrument being then introduced, its edge directed upwards and inwards, one or more free incisions are made, commencing below, and carried in a curve convex outwards and upwards along the tonsil and velum, to the base of the uvula. The time occupied is not more than two or three seconds. The pain is inconsiderable, the relief always immediate, and, in the majority of cases, permanent. The bleeding is encouraged by gently gargling the throat with any warm fluid. The depth of the incisions must of course be regulated by the amount of swelling and urgency of symptoms. It is, however, advisable in every case, to divide the mucous membrane effectually, and even penetrate a short way into the substance it invests. The flow of blood I have generally found to be inconsiderable, when compared with the relief experienced. Whether ulceration be present or not, I have never hesitated, if the concurrent symp-

toms seemed to demand such interference, at once to cut through the ulcerated part if it lay in the line marked out by the eye for incision. Out of some dozens of cases treated by me in this manner, during the last twelve months, none have proceeded to the formation of matter. I can call to mind many which have been attended with superficial ulceration, previous to my being consulted, but none which ulcerated after incision was practised. I have observed that the viscid secretion poured out by the structures in question when in the state of inflammation, has been materially increased in quantity soon after the division of the congested membrane. The reason being obvious, need not be here mentioned. With regard to gargles, I have latterly discontinued their administration, believing that any benefit derivable therefrom is extremely problematical; while, during their use, motion of parts which ought to be wholly at rest is unavoidable. The diet should be liquid, and taken at as long intervals as possible. On the medicines necessary for cure, secundum artem, I have nothing to say, save that it is to be borne in mind that deglutition is difficult and painful.

Lancet, Dec. 20, 1845, *p.* 673.

ORGANS OF DIGESTION.

49.—ON DIFFERENT KINDS OF FOOD.

[The following is one of the simplest and best explanations of some of the more common kinds of food which we have seen; it is from the *Agricultural Gazette.*]

We have been requested by several correspondents to state what kinds of food may be used instead of potatoes. In order that an efficient substitute be provided for any kind of food in general use, it is necessary that the nature of foods generally be understood. Chemical and physiological science have succeeded in pointing out the fact that there are two great classes of secretions elaborated by the vegetable kingdom that are essential to the food of man and of all other animals. The one class of these secretions contains carbon as a distinguishing ingredient, and may be called carbonaceous; the other, in addition to carbon, hydrogen, and oxygen, contains nitrogen, and is called nitrogenous or azotised.

The first class is taken into the stomach as food, and being carried into the blood, meets there with oxygen gas, unites with it, forms carbonic acid gas, and, during this process, gives out heat. This is the source of animal heat. Unless this heat is developed in due quantities, the animal perishes.

These secretions and their composition are as follows :—

	Carbon.	Hydrogen.	Oxygen.
Starch . . .	12	10	10
Sugar . . .	12	9	9
Oil of Fat . . .	11	14	1

These substances enter largely into the food of the whole animal kingdom. Starch is contained in the seeds of most plants, as of the wheat, barley, maize, rice, &c. and in the various other parts of plants used as food by man. It can be easily separated from plants, and is done so for use as food, in the form of tapioca, arrow-root, potato starch, wheat starch, sago, &c. Sugar is also separated from the sap and fruits of plants, in which it is so generally contained. Oil is secreted by, and separated from, a number of plants, as the olive, almond, &c., and is also formed from starch and sugar by the animal, and deposited in its body in the form of fat.

The nitrogenous secretions are found not only in plants but in animals. The fact is, they are simply conveyed from the plant to the animal in its food, without undergoing any change. The nitrogenous secretions form the fabric of the body. Nerves, muscles, blood, &c., are principally composed of them. Their object in food is not the keeping up of animal heat, but the nourishment, the building up of the body. It is only as food contains these secretions that it is nutritious, that it can fulfil the demand for supply by the continual waste of the body in the actions of life. These secretions, though called by different names, as fibrine, albumen, and caseine, and varying somewhat in their physical properties, are modifications of one substance, protein. Protein is composed of 48 parts of carbon, 36 hydrogen, 14 oxygen, 6 nitrogen. The other substances are easily convertible, one into the other, and only vary in possessing different proportions of sulphur and phosphorus, in addition to the elements of protein.

In all the food man eats, he requires that it should possess, in one form or another, these two classes of secretions. The carbonaceous secretions are constantly needed in all food, to keep up the heat of the body; the nitrogenous for building up its fabric. The quantity of the latter required depends on the waste going on in the system, and when this is great, as in severe bodily exertions of any kind, the demand for them will be the greatest. As an average, it has been stated that man requires eighty per cent. of carbonaceous matters, and twenty per cent. nitrogenous. This is about the proportion of such secretions found in wheat flour, and it is undoubtedly this relation of the two classes of alimentary matters that renders it the staple food of man in so large a proportion of Europe. Of other things eaten as food by man and animals, the following table, from Dr. Playfair, gives the relative quantities of carbonaceous and nitrogenous matters:—

	100 parts contain—			
	Water.	Nitrogenous Matter.	Carbonaceous Matter.	Ashes.
Peas	16	29	52	3
Beans	14	31	52	3
Lentils	16	33	48	3
Oats	18	11	68	3
Barley	16	14	69	2
Potatoes	72	2	25	1
Turnips	89	1	9	1

It will be seen from this list how low in the scale of nourishing and respiratory elements the potato stands. It does not contain more than a fifth of the nutritive matter of oats, a tenth of wheat, and a fifteenth of peas, whilst its carbonaceous or respiratory elements are not more than one-half of those seeds. It will be found, then, that although potatoes are cheap, yet in as far as they serve the purpose of food, they are really as dear as any other article on the list. If potatoes are a penny a pound, and bread twopence halfpenny, which is about the price they are in London just now, bread containing ten times the quantity of nitrogenous matter, and twice the quantity of carbonaceous matter, is the cheaper article of diet. Bread, then, under such circumstances, may be successfully substituted for potatoes. But there are other articles on this list cheaper than wheat and its flour. Peas may be obtained at six shillings a bushel, half as cheap as wheat, and contain fifteen times the quantity of nutritious matter found in potatoes. A pound of peas at one penny, and a pound of tapioca at four-pence, would contain (together) as much alimentary matter as fifteen pounds of potatoes.

The flesh of animals is composed chiefly of protein (fibrine), and is consequently more nutritious than vegetable food. It needs, however, carbonaceous matter with it, and this is the reason that potatoes, and other vegetables containing starch, are so frequently eaten with it. The tables in the *Athenæum*, in the review of an absurd book, recommending a vegetable diet, referred to by "Veritas," in the *Gardener's Chronicle* of Nov. 22nd, are not now to be relied on, as they contain no distinction between carbonaceous and nitrogenous principles, and are in many points evidently incorrect. With regard to the use of blood as food, there can be no doubt of its being available for this purpose. It contains about ten per cent. of protein, which, by proper cooking, may be made as available to the system as any other kind of food.

In the above table there are one or two substances omitted, which might be used as food. Maize has a composition closely resembling oats and barley. It contains more oil than either; and thus, in proportion to its protein, more carbonaceous or combustible matter than either of those grains. It is the food of a large class of the community in America, although they prefer feeding pigs on it, and thus obtaining its protein and oil second-hand, in the form of pork. It may be obtained in London at about two-thirds of the price of wheat. Rice is another grain used as food. It contains only two per cent. of protein, and in this respect is not more nutritious than the potato itself. It could only be the food of an indolent people, unless it was eaten in the quantities that potatoes are in Ireland. It would, in this way, be a very expensive substitute for the potato.

There is a class of foods which are not often eaten in this country on account of their presumed indigestibility, which, however, when cooked properly, are not exposed to this objection, viz., nuts which might be eaten. All the forms of nuts, as the walnut, ches-

nut, cocoa-nut, &c., contain large quantities of oil, and also starch and protein. On account of their price, there is but one of these which could be used extensively in this country, and that is the cocoa-nut. This nut is the entire support of the inhabitants of many countries where it grows. It may be purchased in Ceylon at the rate of twelve shillings per thousand. The cost of carriage could not be much, and they might, therefore, become a cheap article of diet. The average amount of meat in the nut is about ten ounces; but we have no accurate analysis of its composition, so as to be able to compare it with potatoes or other foods. We have recently heard of a gentleman in England, who has lived on these nuts for a twelvemonth, and who finds himself in stronger and better health than ever he was in his life. This proves that such things might be eaten with safety, was there need.

Amongst the carbonaceous and nitrogenous substances used as food, there are two, gum and gelatine, which resemble the others in composition, the first belonging to the carbonaceous, and the last to the nitrogenous class, but which either do not enter the blood at all, or when they do, neither serve to keep up the aninal heat, nor to build up the fabric of the body; gummy and gelatinous substances, therefore, cannot become substitutes for the other forms of carbonaceous and nitrogenous matter. Gelatine is found abundantly in the growing parts of animals, in the skin, in the bones, and cartilages; and these parts of animals are used for making soups, jellies, &c. It should, however, be remembered, that although gelatine contains nitrogen, it does not contain protein, and it is questionable as to whether it can in any way be used as a nutritious agent. The experiments of the French Commission satisfactorily proved this. Dr. Buckland is therefore wrong when he states that bread made with powdered bones, which contain gelatine, is more nutritious than before; nor is bone-broth so nutritious as it has been sometimes regarded.—*Agricultural Gazette.*

Northern Journal of Medical Science, Feb. 1846, *p.* 110.

50.—*Hints on the Diagnosis and Treatment of Abdominal Affections.*—By Dr. GRIFFIN.—[In the treatment of acute inflammation of the bowels by *purgatives*, there is a danger of the irritation being propagated from the mucous to the serous surfaces, consequently their use as derivatives cannot be taken advantage of, as in affections of the head and chest. This danger Dr. Griffin points out, and believes that "people do not recover because they are purged, but they are purged because they recover."]

Of the use of *opium* in peritoneal enteritis, Dr. Griffin entertains the highest opinion, and relates several cases in which very large and frequent doses were given with the happiest results. In one case, first two grains and then one grain doses were given every two hours, until thirty-two grains had been taken, two or three grain doses having been resorted to on the occurrence of a relapse. In the case of a girl, ten years of age, whose condition had been

previously much aggravated by the use of purgatives, and who appeared to be sinking, twenty drops of laudanum were given, and in half-an hour a grain of opium. Sound sleep ensued, and the patient, who had seemed almost moribund, was saved, the opiate being continued for some time at longer intervals. To a boy, æt. five, in whom peritonitis occurred during the last stage of typhus fever, probably from perforation, grain doses were given with a successful result. Dr. Griffin does not propose opium as a substitute for general or local bleeding where these can be borne, but as a most useful remedy where this is not the case; or where the disease continues in spite of their institution. The state of the bladder should be carefully watched, as retention of urine is not of unlikely occurrence during the use of full opiates.

[Dr. Griffin does not entirely condemn the use of purgatives, even in the early stages of enteritis, but the greatest advantage is to be derived from them when the force of the disease is broken, and we wish to empty the bowels of their contents. This he effects by *mild purgatives*, combined with *henbane*, but he would feel disposed to defer doing this till a later period, if there was no injurious distension present. He concludes, and general experience confirms the conclusion, that in the early stages of *enteritis*, purgatives do not act until the inflammation has been subdued by depletion, or the disease has otherwise subsided; while, as soon as this has been accomplished, the bowels act spontaneously, or by the use of mild purgatives: that if purgatives are exhibited early, and act freely, death may nevertheless ensue, unless the disease is arrested by other remedies: that purgatives may, *per se*, occasion inflammation, or cause its recurrence; and that inflammation of the bowels may be subdued without any evacuation at all, and the bowels may continue confined for three or four days, without any injurious distension.

In distinguishing nervous affections of the abdomen from inflammatory, by tenderness on pressure, Dr. Griffin points out the simultaneous existence in the former of tenderness in a corresponding portion of the spinal column; and where this exists there is a state of system scarcely compatible with inflammation. He says:]

In determining the diagnosis of abdominal inflammation, where both pain and tenderness on pressure exist, we should always endeavour to ascertain—1. Whether there be any pain or tenderness on pressure in the corresponding portion of the spinal column: because, if there be, although it may not absolutely decide whether inflammation be present or not, it is quite sufficient to account for both the pain and tenderness, without assuming the existence of any inflammation. 2. Whether, if there be no spinal tenderness or pain, the soreness of the abdomen be superficial or deep-seated, which may be ascertained with tolerable certainty in all cases, by an examination directed to that end. And whether, if both superficial and deep-seated, as it usually is in peritoneal inflammation,

gentle, steady pressure with the flat of the hand can be easier borne, than with the points of the fingers. In pain and soreness from affection of the spinal nerves it commonly can be so borne, while in peritonitis every kind of pressure, and even the weight of the bed-clothes, is very distressing. (And yet one of the best means of distinguishing hysterical tenderness will often be found to be the observation of how the *slightest* degree of pressure gives rise to the expression of intense suffering, although the countenance does not always corroborate this. The tenderness in these cases is quite cutaneous.—*Rev.*) 3. Whether the boundaries of the pain or soreness extend beyond what the suspected inflammation could produce. Thus, if inflammation of the liver be suspected, and we find the soreness extending to the ileum or groin, or to the opposite side of the abdomen, it is obvious the soreness cannot be attributable to mere disease of that organ. Again, if the whole abdomen be tender to the touch in a case otherwise closely resembling peritonitis, and we find the tenderness is not confined to the abdomen, but extends over the hips and lower extremities, it is obvious, we can attach no importance to the abdominal soreness as a sign of inflammation. (This is a most valuable sign from which we have often derived the greatest assistance.—*Rev.*) Finally, it should be recollected that constipation may depend on mere loss of power in the intestinal nerves, as well as on spasm, obstruction, or inflammation, since the treatment in each case must necessarily be modified, or directed by the supposed cause of this symptom.

[The reviewer remarks that]

Of the *antiphlogistic* powers of opium, Dr. Griffin expresses his high opinion: and states that for many years he has almost entirely relied upon it for the subdual of enteritis and peritonitis. He bleeds first, however, in subjects who will bear depletion, employing calomel also when the disease is very intense, and resists opium powerfully—suspending this as soon as the symptoms give way, and giving the opium alone, whereby troublesome salivation is usually prevented. In *rheumatic* inflammation it is as useful. In acute inflammation of the *mucous membranes* opium was formerly supposed to be contra-indicated; but the cases published by Dr. Stokes and others, of cure of inflammation of the mucous membrane of the bowels with exhausting diarrhœa, show the propriety of the practice. Dr. Griffin attributes the evil effects which have followed the use of opium in these inflammatory affections to its having been given in too small doses, which, in cases of mucous phlegmasiæ, suppress the diarrhœa without subduing the inflammation to which this had even acted as a relief. But in these, as well as in serous inflammations, bleeding must be premised where the strength will admit of it, applying at the same time warm poultices to the abdomen. In other cases, in which bleeding is out of the question, and opium seems powerless, as in bad dysentery, a combination of ipecacuan and opium acts sometimes surprisingly. Dr. Griffin alludes to two cases, in which he gave three grains of opium with from three to five of ipecacuan every two hours with the best effect.

[Although opium is contra-indicated in inflammatory affections of the cerebro-spinal system, from its tendency to produce congestion, yet when combined with sufficient doses of tartar-emetic, it allays nervous irritation, quietens the action of the capillaries, and procures sleep. Its effects are wonderful in many cases of puerperal mania, delirium tremens, and the advanced stages of fever. It is to Dr. Graves we are indebted for pointing out the value of this combination.]

Dr. Graves directs four gr. of emet. tart. and two drachms of laudanum to be mixed with half-a-pint of camphor mixture, two table-spoonfuls of which are to be given for the first dose, and one every half-hour afterwards, until the delirium abates, or some signs of drowsiness appear.

[Dr. Griffin believes that the restorative power of opium in *exhaustion from hæmorrhage*, depends principally upon its property of producing congestion of the brain, and thus restoring tension to the cerebral vessels.]

Medico-Chirurgical Review, Jan., 1846, *p.* 49.

51.—*Herbaceous Aliment in the Treatment of Chronic Dyspepsia.* By Dr. Dick —It is surprising what an efficient adjunct to medicinal treatment herbaceous aliment is in forms of chronic dyspepsia dependent on, and complicated with, a hyperæmic or (sub-) inflammatory condition of the mucous membrane. If the diagnosis has been just, the effect of such a diet is strikingly efficacious, otherwise harm may follow. Herbaceous diet judiciously employed allays many anomalous nervous symptoms, sensibly abates that uncomfortable heat of stomach which persons suffering from this form of indigestion so much complain of, and is a valuable corrector of those four morbid conditions of the mucous membrane *chaleur*, *rougeur*, *tumeur*, *douleur*, which, according to Broussais, characterise gastritic disorder. Under the term herbaceous aliment, I include among other things grapes, apples, pears, strawberries, pomegranates, &c. The best time to employ this aliment is about an hour before breakfast, and in the intervals of meals.

The only inconveniences to be guarded against, on the first adoption of such a diet by persons long improperly disused to it, are flatulence and fæcal accumulation in the intestines, which, though unpleasant, are void of danger. A little soda and ginger will obviate the first mishap. The latter is to be prevented by making the change gradually, and by careful mastication; and if it occur in spite of these precautions, by recourse to a pill of aloes, capsicum, and quinine. Persistence in the use of this aliment will teach the stomach duly to digest, and the bowels to evacuate it, while various nervous symptoms will vanish under its employment; an unwonted vigour and freshness is felt, and the state of the stomach and bowels are sensibly improved. I know of no derangement of the digestive organs in which a prolonged abstinence from herbaceous articles of food is judicious, or even safe. From such absti-

nence, on the contrary, I have witnessed the worst effects—foul tongue, ill-tasted month, ill-odoured breath, perspiration of a heavy animal smell, blotched skin, scanty turbid urine, stools insupportably fœtid.

Medical Gazette, March 27, 1846, *p.* 548.

52.—*On Cholera.*—By James Copland, M.D., F.R.S.—[Dr. Copland, in the last number of the *Dictionary of Medicine*, says on this subject:]

I conclude this part of the inquiry by stating the inferences which may be drawn from an extensive view of what is known of this pestilence, as it has appeared in Asia and in Europe, and from intimate observation of its phenomena, as they lead to various considerations calculated to arrest its progress, and to remedy it, when an attack has not proceeded too far in the destructive processes in which it has been shown to terminate. A. The pestilential cholera seems to have been propagated by an animal miasm, or effluvium of a peculiar kind, emanating from the bodies of the affected; and this effluvium being inhaled with the air into the lungs, paralyses these organs, and acts as a poison on the class of nerves which supplies the respiratory, the assimilating, the circulating and secreting viscera, vitiating also the whole mass of blood, and thereby occasioning a specific disease, which, in its turn, gives rise to an effluvium, similar to that in which itself originated; which, also, in like manner, perpetuates its kind, under the favourable circumstances of predisposition, aerial vicissitudes, &c., and thus a specific form of disease is propagated far and wide, as long as predisposing, concurrent, and determining causes favour its propagation. B. The morbid impression of this effluvium or poison upon the nerves of organic life, and probably the effects of its introduction into the current of the circulation, are of a sedative kind, rapidly destroying the vital energy of the former, and vitiating the latter, and thereby giving rise to the characteristic phenomena of the malady. C. The impression of the effluvium on the organic class of nerves, and the vitiated state of the blood may be viewed as the proximate cause, not only of the disturbance evinced by the respiratory, the secreting, the assimilating, and the circulating functions, but also of the morbid actions of the stomach and bowels, and the copious serous discharges from these organs, as well as of the muscular spasms, the sinking of all the vital and animal powers, of the shrunk and collapsed state of the surface of the body, of the black, thick state of the blood, and of the rapid depression of the animal temperature. D. The states of the perspiration and skin, and the discharge of the serous portion of the blood by the stomach and bowels, imparting the peculiar appearance of the evacuations, proceed from the alteration primarily produced in the vitality of the frame, and in the condition of the blood; and it is chiefly through the medium of the cutaneous surface, of the liver, of the kidneys, and of the mucous membranes, assisted, perhaps, also by the other secreting viscera, that

the morbid change of the blood is remedied, and impurities removed from it. E. The advanced stages, or the consecutive, or febrile symptoms of the disease, whether those chiefly depending upon the state of the nervous functions, or of the circulation within the brain, or proceeding from the condition of the abdominal viscera, arise partly from the shock received by, and the depression of, the vital energy of the frame in the early stage, partly, if not chiefly, from the alterations which had taken place in the blood during the early stages of the malady. F. The effluvium or seminium, which propagates the distemper, is generated in the progress of the changes produced in the blood, and is emanated or discharged from the mucous surfaces of the lungs and digestive canal, and from the cutaneous surface, along with their respective exhalations and secretions; and this seminium, by contaminating the surrounding air, or woollen cloths and animal products, capable of attracting and retaining for a while animal effluvium, affects those of the healthy who are predisposed, either constitutionally, or by antecedent, concomitant, or determining influences, or on whom this efficient agent acts in an intense or concentrated form, or is aided by accessory or concurrent causes.

Medico-Chirurgical Review, Jan. 1846, *p.* 149.

53.—*On the Use of Clysters.*—By Dr. Hall, of Glasgow.—[Dr. Hall has long been in the habit of ordering large purgative clysters, to evacuate the whole of the large intestines, as far as the ilio-cœcal valve. In consequence of some eminent practitioners in Glasgow doubting whether or not clysters could be made to pass through the sigmoid flexure of the colon, Dr. Hall commenced a series of experiments on dead bodies, to decide this important practical question. We may here state, however, that the efficacy of powerful clysters, is, in England at least, more duly appreciated than Dr. Hall supposes, both in cases of obstinate constipation, and in strangulated hernia, as numerous papers in previous volumes of this Retrospect testify.* Two cases related by Dr. Hall show how much we may depend on the practice, and to what extent it may be pushed. In the first case, Dr. Hall was sent to operate on a poor man, said to be labouring under strangulated hernia; he was an emaciated old man, sixty years of age—pulse rapid; bowels confined for the last ten days; there had been a stercoraceous vomiting for two days. There was a hard tumour in the right groin, supposed to be the intestine strangulated, but upon examination, Dr. Hall found it to be an enlarged gland; and it had been in existence more than fourteen years. The patient had been for years occasionally troubled with colic, resulting from constipation. Dr. Hall remarks:]

I determined (considering his present symptoms were owing to a similar cause) upon administering, if possible, a large *purgative*

* See Article Hernia, in General Index, Vol. ix.

enema of from two to three quarts. In this I succeeded; the man retained it for twenty minutes, at the end of which time the greater part of the fluid was voided, slightly tinged with feculent matter. About three hours afterwards, however, he had another evacuation, which nearly filled a chamber-pot with dark-coloured, most offensive, and nearly solid fæces. The stool was shown to me the following morning, upon my second visit. I expected to have found him in a dying state, (for this satisfactory result of the enema had not occurred at the time I left him the previous evening), but, to my surprise, a marked improvement had taken place. The pulse, which before the operation of the clyster was so rapid and feeble as not to be counted, was now below a hundred, and possessed more strength; the vomiting had ceased; and the countenance had lost that peculiarly anxious, cadaverous look which it had when I first saw him. To conclude the history of the case in a few words: the man perfectly recovered, and for two years subsequently was in comparatively good health.

It was this case which ruled my procedure in all subsequent *obstinate cases of constipation not depending upon recognised strictures, strangulated herniæ, or abdominal tumours;* and I have reason to feel highly gratified with the successful issue of the practice.

[In the second case, the bowels had not been properly opened for ten days; the abdomen was not prominent, but percussion indicated the accumulation of hard fæces, in the cœcum and colon particularly. The gentleman in attendance on the case agreed with Dr. Hall as to the seat of the obstruction, but thought large enemata could not be retained long enough to do good—ordinary sized ones had for the previous two days failed to produce relief. It was agreed, however, to try large injections, and Dr. Hall says:]

I threw up, by Read's enema syringe, fiv e pints of oleaginous gruel, having previously dissolved in it an ounce of sulphate of magnesia, and a table-spoonful of common table salt. The administration of this large quantity of fluid occupied *a period of twenty minutes*; for it is highly important that the process should be conducted as slowly as possible. The patient, after the first two or three pints had passed, could trace, by his sensations, the progress of the fluid, his description of it accurately corresponding with the course of the colon, even as far as the cœcum: the sense of distention was, at times, almost insupportable. I, however, prevailed upon him to retain the injection for nearly twenty minutes, in order that the contraction of the distended bowel might become more general, and the evacuation more complete. I need not dwell longer upon the case than to state, that dark, almost black, scybalous masses, highly offensive, and of the most diversified shape, sufficient to fill a pint measure, came away, affording marked relief in every respect to my patient, the vomiting and hiccup ceasing, and the pulse falling to the natural standard, followed by sound sleep, and the next morning, a strong desire for food, which he retained upon the stomach. On

the second day from this, I gave another injection of like quantity and quality,—more blackish scybalæ were voided at the commencement of the stool, but towards its close, the discharge was about the consistence and the colour of cow's dung; from that time the patient rapidly improved, and now (October 28) the old gentleman (82 years of age last week) walks out every day for an hour, and enjoys his meals, taking, every night, at bed-time, five to ten grains of *pil. rhei co.*, which effects a daily action upon his bowels.

Upon my return to Glasgow, I related this case to my kind and very able friend, Dr. Lawrie, and it was through his instrumentality that I was enabled the same day to demonstrate (at the Royal Infirmary of this city) upon a dead body, (in the presence of Dr. Lawrie and his house-surgeon, Dr. Lancy,) that I could *with facility* inject (with the aid of Read's enema syringe) not only *the whole of the large* bowels, but that the fluid would even pass the ileo-cœcal valve, for we discovered, upon subsequent examination, that it had traversed a *considerable portion* of the small intestine.

[In the first experiment on the dead body, Dr. Hall threw into the bowel five or six pints of thin gruel, and on examination it was found to have even passed the ileo-cœcal valve. As far as the operation could go for any thing on the dead body, this was decisive. The next experiment was upon the living subject, a man suffering from stricture of the rectum; the pipe was passed through the stricture, and an injection of five pints of gruel thrown up, and on percussion afterwards in the region of the colon, a dull sound was elicited; before injecting this it was clear.

The third experiment was performed on a stout man. The abdomen was carefully percussed, and the whole of the colon gave a clear sound; the patient was placed on his left side, and three pints of injection thrown up into the bowel, (by Read's enema syringe), and now there was dulness on percussion as far as the point where the transverse joins the descending colon. The man was then placed on his right side, and three pints more injected into the bowels. In a few minutes the man went to the water closet twice, and after the second time, percussion indicated the presence of fluid, as far as the sigmoid flexure of the colon. "This case was marked by an important practical point, viz., that the best position of the patient for the operation is lying upon the *right* side, not upon the *left*, as in former cases, and with the pelvis considerably raised."

In the fifth experiment, seven pints, of oleaginous gruel were injected into the bowels, and from percussion it was evident that the large bowels were quite filled, and probably some part of the small, also. In another experiment on a dead body, in which eight pints of water were used, the fluid passed through all the intestines and even partially filled the stomach. Dr. Graves, of Dublin, and other modern writers, have witnessed the beneficial operation of large injections in fæcal accumulation.]

Dr. Marshall Hall, in his recent publication, called *Practical*

Observations and Suggestions in Medicine, says, if we wish to *wash out the colon*, we should employ Read's syringe, and that *three pints* of warm water *will be sufficient*—his rule for the administration being, "as slow as possible, and as long as possible." "In this manner," says he, "the intestine is filled before it is distended, its peristaltic action is at length excited by the stimulus of that distention, and it contracts energetically in a mass, which, by its bulk and rapid flow, carries away the feculent matters mechanically."

It is but right to observe, that I did not see the work of Dr. Marshall Hall, just referred to, until I had nearly completed the experiments which I have detailed to the Society. I was therefore much gratified to find that the *mode* of administering large injections which I had long practised, was that recommended by this highly talented and practical physician.

I differ, however, from Dr. Marshall Hall in one very important point relative to large injections, viz., as to the *quality* of the fluid used. It will be recollected, that I employed *well-boiled* oatmeal gruel, with a certain admixture of *common salt and butter*, in the two cases which I have related to the Society; and I am still in the habit of preferring this to any other form of purgative clyster. My reasons for this preference are twofold: firstly, because the ingredients can be procured in almost every establishment; but secondly, and more particularly, from the fact, that no other injection has, in my hands, answered so well as this. It possesses mucilaginous and lubricating properties which render it especially valuable in all forms of obstructed bowels, combined with a stimulating, solvent, and aperient action, (from the common salt it contains,) constituting it an excellent substitute for the bile, which, we are aware, cannot in these cases *pass into the seat* of the obstruction to stimulate by its presence the peristaltic action. We know that the bile possesses this stimulating property, for when the ductus choledochus is tied, constipation always ensues (see *Carpenter's Physiology*); and we have the assertion of Liebig (*Organic Chemistry*, p. 154), that "for the production of bile in the animal body, a certain quantity of soda is, in all circumstances, necessary; without the presence of a compound of sodium, no bile can be formed.

[Would not these cases be benefited by the ox-gall? From several cases related in the different journals, and reported in our former volumes, it appears that this substance has in some measure the power of altering the consistence of hard scybalous fæces, and rendering them more soft and pulpy. This is effected even when taken in the form of pills, and we do not see why it should not be equally efficacious when administered in the form of clysters, as exemplified in a case of Dr. Allnatt's, in our 56th Article.]

Monthly Journal of Medical Science, Jan. 1846, *p.* 1.

54.—*On Constipation from Indolence of the Bowels, and its Treatment.*—By Dr. Teissier, Lyons.—[In many cases of constipation arising from indolence of the bowels, warm water injections are injurious, because as the muscular fibres are in a state of atony, they

are thereby lengthened, softened, and deprived of their contractile power. Dr. Teissier has employed nux vomica, cold lavements, and astringents, with good results. He remarked that by the introduction of tents into the anus, and the use of cold lavements, the constipation was relieved; he was led to believe that this was effected by rousing the contractile power of the large intestine, and that nux vomica would better answer this end. He accordingly gave a pill every morning, containing one-fifth of a grain of the extract: in 14 days the constipation was relieved. In another case, the stomach was implicated, and he was subjected to the ordinary treatment for chronic gastritis. This only increased the constipation; he then had a full diet and nux vomica, one-fifth of a grain daily. He was cured in a month.]

He thinks it is particularly indicated in those cases where there is reason to suspect a general want of tone in the bowels, as in the paralytic, or in old persons, or where we may suspect a want of tone of the muscular coat of the intestine, in consequence of great and long-continued distention, or, in short, when the constipation can be referred to an undue secretion of gas, which, of itself, by causing distention of the bowels, diminishes their contractile power.

Injections of cold water, better known than nux vomica, constitute likewise a valuable resource against constipation from want of tone. Of late years they have been much vaunted; but, nevertheless, they are as yet but rarely used in practice. They act somewhat in the same way as the nux vomica in rousing the sensibility and the contractile power of the intestine. Our author does not, however, consider that the two remedies ought to be used indiscriminately under the same circumstances; he thinks the cold injections particularly suitable to individuals of a nervous highly irritable temperament; to the hypochondriacal, and to females suffering from irritation or engorgement of the womb.

[Astringents, as recommended first by Bretonneau, are often very useful; Trousseau and Sidoux in their treatise on therapeutics, recommend them highly. They are not, however, generally used in practice.]

One can readily imagine the reluctance some medical men have to recommend, in constipation, injections containing the substances they are in the habit of prescribing in diarrhœa—such as catechu, kramiria, alum, &c. But if we reflected that in persons who have long suffered from constipation, particularly females, the rectum forms above the sphincter a pouch, sometimes of considerable size, in consequence of the distention from accumulated fæces, to which the coats of the bowels have been subjected, we should be less surprised that the idea has occurred to have recourse to the injection into the rectum of tonic and astringent substances, with the view of causing corrugation of the muscular fibres of the bowels, which, by corrugating, become shorter, and thus diminish the enlargement of the cul de sac now spoken of.

Astringent injections are particularly suitable in cases where there is reason to suspect an abnormal dilatation of the lower portion of the rectum; for instance, in constipation from the presence of a mechanical obstacle at the anus, caused by hæmorrhoidal tumours, swellings of a venereal or cancerous character, or contraction of the sphincter with or without fissure. These injections are, moreover, suitable, for the same reason, to females in whom constipation exists, along with engorgement or retroversion of the uterus, and to all those persons who, having their bowels relieved only once in eight or ten days, void, after painful efforts, which can be compared to nothing but a sort of parturition, an enormous mass of hardened and dry fæces. In all these cases, it is of consequence to rouse the tonic action of the muscular bands of the large intestine, and this indication is well fulfilled by astringent injections,

The ingredients of these injections may be infinitely varied; they may be composed of red roses, krameria, oak bark, bistorta, catechu, alum, &c. The following is Teissier's mode of proceeding:—He begins with the simple infusion of roses, cold, and at the end of a few days, he adds to each injection from 15 to 30 grains of the extract of rhatany. He thinks that in obstinate cases a minute portion of the extract of nux vomica—one-seventh or two-sevenths of a grain, for instance—might be added, with advantage, to each enema. He considers, also, that they should measure 10 or 12 ounces, so that they may not be retained many minutes; that their action may be of short duration, and that the muscular fibres of the bowels may be allowed readily to contract themselves. The nux vomica, the cold, and the astringent injections, are not certainly the only means at the disposal of the practitioner in the constipation we are now treating of; but they are those of which our author has had most experience, and from which he has derived most success. We must not forget here the means proposed lately by Fleury—viz., the introduction of tents into the rectum, which, acting as a foreign body, stimulate the bowel by their contact, and rouse its contractile power; nor the shampooing of the rectum, proposed by Recamier; nor, lastly, inspissated ox-gall.

To all these means must be added, as auxiliaries, drinks composed of vegetable bitters, a tonic diet, the use of black meats, Bordeaux wine, active exercise in the open air, &c. These are useful auxiliaries, much more beneficial certainly than the use of white meats, (veal and chicken,) relaxing vegetables, such as sorrel, spinach, chicory, cooling lemonades, juice of prunes, bouillon aux herbes, &c.

Lancet, Dec. 13, 1845, *p.* 645.

55.—*Accumulation of Fœculent Matter in the Colon.*—By Dr. Schoenlein.—[The accumulation of hard fœculent matter in the bowels, more particularly of the colon and cœcum, is often very embarrassing to the young practitioner, as it frequently causes symptoms resembling peri-enteritis, and treatment is of no avail

in alleviating pain and tenderness, until the scybalous matter is got rid of; but there may be just the opposite symptoms present, viz., those of diarrhœa—hence the necessity for careful examination of the abdomen, and also of the evacuations.]

The accumulation of fæculent matters in some parts of the intestinal canal is apt to be mistaken for scirrhous and other tumours of the viscera. I once saw a man, says our author, whose case had been declared by an experienced physician to be one of scirrhous swelling in the abdomen,—in consequence of a hard immoveable lump that was situated at the side of the umbilicus—but who fortunately was speedily relieved of all his inconvenience by the use of warm water enemeta and castor oil. He subsequently died of another disease; and, on dissection, it was found that the ascending colon was contracted at one point, and that the gut, nearer the cœcum, was much distended, and quite filled with hardened fæcal matters. In this case, the swelling was not much bigger than a man's fist; but, in another, it was as large as a child's head, and the fæces were as hard as cannon balls. It has been frequently observed, that the fæces are apt to accumulate in the cœcum; and it is well for the medical practitioner to be aware of the fact that, in such cases, there may be no constipation; but that even a diarrhœa may be present. A passage is then formed either through the substance of the hardened fæces, or between them and the walls of the gut; and along this passage the thinner matters may flow on, while the thicker and more consistent are retained. A case, therefore, of seeming diarrhœa may actually be one of inveterate lodgement. I recently observed something of this sort in the case of a young female, who was recovering from peri-enteritis of the small intestines, and inflammation of the mucous membrane of the colon. The stools had been frequently thin, and mucous for several days; but then a large quantity of solid scybalous fæces were evacuated: no sooner did this take place than the diarrhœa entirely subsided. This circumstance is not unfrequently alluded to by the old writers, in their descriptions of dysentery. The bowels, above the seat of the accumulation, are usually much distended with flatus. The circumstances now mentioned must satisfy every reader of the necessity of a physician carefully examining for himself the condition of the alvine evacuations, and of not trusting to the mere report of patients, in cases of obstinate diarrhœa. It will be prudent, too, sometimes to ascertain the state of the rectum by a manual examination.

Medico-Chirurgical Review, Jan., 1846, *p.* 181.

56.—*On Ox-gall in Constipation during Pregnancy.*—By R. H. Allnatt, M.D.—[Dr. Allnatt reports the case of a patient of his three months advanced in her first pregnancy. She was habitually constipated, but at this time the stomach became so irritable as to reject all aperients which were given her. Warm water enemata also failed in relieving the bowels. Dr. A. adds,]

I then resorted to the inspissated ox-gall, a drachm of which I directed to be dissolved in about a pint of warm water, and used as an enema. The relief was instantaneous; a mass of scybala being expelled which had evidently lain impacted in the colon.

[So long as 15 years ago, Dr. Copland, (as may be seen by his works), employed this remedy, and spoke highly of its therapeutical properties.]

Medical Gazette, Feb. 6, 1846, *p.* 253.

[At a meeting of the South London Medical Society, in February last, Dr. Aldis alluded to a case of constipation of three weeks' standing, in which every ordinary remedy had been tried without effect: he had that day ordered solution of ox-gall to be injected into the bowels every four hours. Dr. Todd related a case of constipation in a boy fourteen years of age, of sixteen days' duration, in which the seat of obstruction was near the junction of the ileum with the cœcum; when every remedy failed to give relief he resolved to try the *injection of air*, by which he so filled the large intestines and cœcum that the shape of the latter could be seen through the abdomen. The next morning the patient had three or four copious evacuations. This plan of treatment, Dr. Chevers observed, was recommended by an American writer, and had often been employed with success in the intus-susception of children.

Medical Gazette, Feb. 27, 1846, *p.* 392.

57.—*On the Use of Oxide of Silver.*—By Butler Lane, M.R.C.S. —[Mr. Lane is convinced that the essential therapeutic action of silver is directly sedative, and that its appliance is indicated when a state of excitement or irritation to a certain extent exists. Dr. Golding Bird terms the oxide an "*organic sedative.*" Mr. Lane says]

I shall first speak of the external appliance of the oxide of silver in the form of an ointment or powder. In cases of irritable ulcer its action is highly beneficial, and it is decidedly much preferable to the nitrate, where the stimulant caustic action of the latter is not required. In many cases we know that the primary destructive causticity is prejudicial, giving a stimulant to the morbid absorbent tendency. In the external forms of ophthalmia an ointment of oxide of silver of the strength of a drachm to the ounce, will often exert an influence extraordinary in its rapidity. There can be no doubt that such a preparation is well nigh analogous to Mr. Guthrie's "*black ointment*," which he is in the habit of using with so much success for the purulent ophthalmia of children. The same ointment is made with the nitrate of silver, but it necessarily becomes rapidly converted into an oxide by the mode of preparation.

[He has likewise found it exceedingly useful when applied to *sore nipples.* Speaking of the internal administration of the oxide of silver, first, in restraining *undue secretion*, whether of sanguineous character or otherwise, he says:]

I have known it arrest epistaxis: in one case, where the hæmorrhage was almost of daily recurrence in a young chlorotic female, I have seen it exert some influence over hæmoptysis, though I cannot speak very positively in its favour. In the profuse purulent expectoration and colliquative perspirations of phthisis I have found the employment of the remedy attended with considerable temporary advantage. Of its efficiency in restraining hæmatemesis I have met with several instances, and in other gastric discharges I have had abundant evidence of its efficacy. In very many cases of hæmorrhage from the bowels, dysenteric or otherwise, the administration of the remedy has proved highly serviceable. In one instance, a man, æt. 40, suffered much from time to time with copious discharges of blood and purulent matter per anum, apparently connected with disease of the descending colon. The oxide of silver in half-grain doses twice or thrice a day acted most beneficially on two occasions within the last twelve months in restraining the hæmorrhagic discharge, and in abating the purulent secretion: it also had much effect in allaying the general irritable condition of the stomach and bowels, and an irregular state of the heart's action, which I understood had been previously attributed to organic lesion, though evidently a mere sympathetic affection. In mucous and bilious diarrhœa, when become idiopathic and not merely symptomatic of undigested aliment or hepatic congestion, the oxide of silver is an unfailing remedy: it is, however, desirable to combine it with a small proportion of opium where spasmodic pain exists. In a case of obstinate chronic diarrhœa of many years' standing which came under my care, the oxide appeared to be the only remedy which possessed any restraining power: it would always abate the intestinal secretion, but as the affection was connected with long standing disease of the liver, accompanied by chronic jaundice and dropsical tendency, much caution was required in the use of the remedy. I have on several occasions found much advantage in the employment of the oxide of silver in the form of diarrhœa consequent on typhus fever, and doubtless connected with an ulcerated state of the intestinal mucous membrane: we know that this diarrhœa, which is often dysenteric in its character, constitutes not unfrequently the most urgent symptom towards the later period of the disease, and one for the abatement of which neither opiates nor astringents will act kindly. It is, however, in uterine discharges that the effect of the oxide of silver is most remarkable; it exercises an almost invariable control, apparently indicating a specific uterine influence. I have, in my former papers, related several cases illustrative of this fact, and have of late years had much further experience as to the influence of the medicine in different forms of menorrhagia, &c. and consider that when used with due precaution it is well nigh infallible. Where the hæmorrhage is of secretive character, occasioned by local excitement, it is that the oxide of silver will produce the most decided effect. When, on the other hand, the cause is chiefly mechanical, from the rupture of blood-vessels, the same advantage

will not attend its employment. Speaking generally also, I believe that where an hæmorrhagic tendency is connected with an imperfect stasis and abnormal tenuity of the blood, the beneficial influence of opium, lead, and tannin, will be found far superior to that of the oxide of silver.* *Medical Gazette, April* 10, 1846, *p.* 640.

58.—*Use of Castor Oil in Mucous Membrane Cases.*—By Dr. Thomson, Burton-on-Trent.—[Dr. Thomson believes there are but few cases of diarrhœa occurring in infants under a year old but what may be cured by castor oil, even when ulceration has taken place; as shown by a predominance of blood in the evacuations—tenesmus, abdomen tumid and painful, mouth dry and aphthous, &c., &c. He gives the castor oil with yolk of egg, and according to circumstances does or does not add a gentle opiate. He recommends, however, as accessory, the warm bath, liniments to the abdomen, and occasionally a mild mercurial dose. He observes]

No mercurial so quickly changes the character of the evacuation as the emulsion, which only requires to be steadily persevered in. The following is the form in which I generally prescribe it for infants:—For an infant of from two to four months old: ℞. Ol. ricini, ʒi—ʒiss, Vitelli ovi semis., Aq. aneth. feneculi, āā ℥i. Ft. emuls. Sumat. coch. parv. bis die.

To the above, from two to six drops of laudanum may be added, or not; but, of course, this as well as the size and frequency of the dose, must vary with the case. The mixture is generally taken readily, and even liked.

The same preparation is equally useful in that form of intestinal affection which is met with in children of from one to nine years of age, identical with the infantile type cited above, but presenting slightly varied symptoms, such as the tendency of the evacuations to become watery, brown, black, and very offensive; the picking of the lips, nose, &c. In a case of this nature which lately came under my care, the patient, a boy aged three years, lay almost insensible and somnolent. The evacuations, resembling black dirty water, and very offensive, were passed eight or ten times in the twelve hours, Other symptoms of sabacute inflammation of the mucous membrane were also present. After the first dose of simple emulsion, there was no motion for thirty-six hours, all the other symptoms becoming ameliorated.

The medicinal action of the oil is certainly much modified by its union with the yolk of egg, for the same dose which would act well as an aperient alone, when thus combined, will scarcely act at all.

Monthly Journal of Medical Science, Feb., 1846, *p.* 88.

59.—*On some of the Dieases of the Liver.*—By George Budd, Esq., M.D., F.R.S., &c.—[Perhaps no diseases are involved in more mystery, as to diagnosis and prognosis, than those of the liver, if we except the affections of the nervous system. After giving a sketch of the anatomy of the liver, and examining minutely the composition and properties of the bile, Dr. Budd enters upon the]

* See conclusion of Mr. Lane's Paper, in Article 60.

Sources and uses of the bile. The views entertained of the sources and uses of the bile have, of late years, undergone very important alterations. At one time, this fluid was regarded as almost wholly excrementitious; another supposed principal use was to promote the peristaltic action of the intestines. The present belief is, that the bile, far from being to a great extent excrementitious, is almost entirely *re*-crementitious; and though it seems probable that the evacuatory movement of the intestines is in part owing to this "natural purgative," as Dr. Budd terms it, yet doubtless that effect is less due to any isolated action of the bile, than to the normal stimulus of the fæcal mass, as a whole.

The bile, in common with the excretions of the lungs and kidney, is probably, to a great extent, derived from the decomposition of the tissues of the body, but part of it also is, no doubt, educed from non-nitrogenized articles of food. Carbon is the substance chiefly eliminated by the liver, in like manner as it, along with hydrogen, is the chief constituent of the pulmonary excretion. But an important distinction obtains between the two cases. While the carbon of the lungs is united to oxygen, and excreted in a non-combustible state, the carbon of the liver is non-oxygenized, is still combustible, and is intended, not for excretion, but absorption. But the fact that the two organs secrete carbon, gives them a complementary relation, of which we avail ourselves in therapeutics.

First, then, the liver is, *in part*, an excrementory organ. The resin and the colouring matter are excrementitious matters.—Secondly, the liver is a depuratory organ. The abdominal circulation returns through it, and, as Dr. Budd justly observes, "the blood which has come from the stomach and intestines must necessarily be charged with many impurities besides those derived from the mere decay of the tissues. Along the extensive mucous tract with which every thing we eat and drink is brought in contact, absorption is constantly going on, and various matters must therefore enter the portal vessels, not fit by their nature to form blood, or to serve any other purpose in the body. Many of these substances are removed from the blood in its passage through the liver." The part which the bile plays in digestion is more obscure and and uncertain. Dr. Budd agrees with those who think that the share which the liver has in assimilation, has been over-rated. According to the most recent and approved views of physiologists and chemists, the *solution* of our food is all that is required, and not, as was formerly supposed, a mysterious *production* from it of albumen, fibrin, and casein, which it did not previously contain.

[At the conclusion of his introductory chapter, Dr. Budd makes some pathological and therapeutical observations, and among cholagogue medicines he especially mentions mercury, iodine, muriate of ammonia, and taraxacum.

Dr. Forbes, however, has never observed peculiar cholagogue properties in muriate of ammonia, nor yet in rhubarb, which Dr.

Budd subsequently instances, and is surprised that colchicum and colocynth should have been omitted, particularly the former, since in this respect it stands, perhaps, next to mercury. Nitric acid, also omitted by Dr. B., in some cases notably promotes the action of the liver. The first morbid condition of this viscus treated of is]

Congestion. The common and usual form of congestion of the liver is, that of the hepatic vein and its capillaries; and that form may be caused by any disease in the heart or lungs tending to obstruct the return of blood by the hepatic veins. If, while the hepatic veins and their capillaries are thus congested, the portal vein and the capillaries immediately branching from it are empty, the appearance called mottled liver is presented, caused by the central vessels of the lobules being full of blood, while those on their margins are void of it. And just in proportion as the vessels continue to be distended in a direction distal from the heart, and as the portal capillaries which form the margin of the lobules become filled gradually, will the mottled appearance merge into a homogeneous redness. And now, in addition to sanguineous, will biliary congestion begin to take place; and this plainly in consequence, in the majority of cases at least, of the pressure of the distended blood-vessels on the minute branches of the biliary ducts, whereby the discharge of bile along these ducts is impeded. The general result of this state of things is hyperemia; and a state of distension of the biliary vessels analogous to hyperemia, but for which we have no exact name. The liver, of course, becomes enlarged, and its colour, when an incision is made, is a deep reddish-brown or black.

The diagnostic indications of this state are, the dropping of the liver several inches (more or less), according to the degree of enlargement), below the ribs, and a fulness felt by the patient and perceived by the physician in the right hypochondrium. There is not "in general" pain; never, we should say, in this simple form of congestion, until its prolongation begins to give rise to inflammatory action. And even then, pain is hardly or not at all experienced, until the peritoneal investments begin to suffer, and the affection becomes what Bonnet calls hepato-peritoneal. See Art. 5, of *British and Foreign Medical Review* for July, 1843

[In congestion depending upon obstructed circulation through the heart, he advises bleeding, purgatives, diuretics, rest, and those measures, in short, which peculiarly relieve cardiac disease.

The reviewer here remarks, that purpura hæmorrhagica, scorbutic disease, and any affeccions tending to diminish the fibrine of the blood, require the mineral acids and the bitter extracts. He says, he has witnessed great advantage from the compound infusion and spirit of horse raddish, taken twice or thrice a-day, with ten drops of nitric or chloric acid added to each dose. Dr. Budd divides inflammatory affections of the liver into *suppurative*, *gangrenous*, and *adhesive*, and his object is to show, that by far the majority of cases of abscess of this viscus are owing to suppurative

inflammation of some vein, and consequent contamination of the blood by pus. In approaching the *questio vexata* of the value of mercury in hepatic affections, he observes, that]

In this country, mercury has generally been resorted to, when the local symptoms have led to the suspicion that the liver was diseased, but I fear, with no benefit to the patients. It has been well observed by Abercrombie, "In the liver diseases of this country, mercury is often used in an indiscriminate manner, and with very undefined notions as to certain specific influence, which it is supposed to exert over all the morbid conditions of this organ. If the liver be supposed to be in a state of torpor, mercury is given to excite it; if in a state of acute inflammation, mercury is given to moderate the inflammation, and reduce its action."

[The reviewer on this subject says, that although he greatly respects the authority of the late Dr. Abercrombie, and that of Dr. Budd, yet he considers the use of mercury defensible both in many states of torpor, and in many also of acute inflammation of the liver.

When the liver is tumid and tender, with equivocal marks of diminished secretion, such as pale or white stools, no agent more rapidly reduces the volume, and restores the action of the organ, than mercury; and he would be a bold man who would refrain from giving it, of course, with other means, in almost any acute Inflammation of the liver, except that caused by occlusion of the common duct.

When abscess has formed in the liver, Dr. Budd would never recommend it to beopened, unless assured by circumscribed œdema, or a slight blush on the skin, that union had taken place between the integument and abscess.

On the treatment required where there is an excessive secretion of bile, Dr. Budd appends some proper and useful hygienic suggestions]

These measures (says he) are generally sufficient for the time, but they do not strike at the root of the evil. Exemption from future attacks, and from the manifold and greater evils to which these disorders may lead as age advances, can only be procured by a change of habits. One of our objects in directing this should be to increase the amount of oxygen inspired, and thus to consume in respiration, or burn off, materials that would otherwise be left for the liver to excrete. The means most efficacious for this purpose are sea-voyages, riding, or other exercise in the open air, well-ventilated rooms, early rising, the cold or shower-bath, &c. Too much indulgence in sleep, which so much reduces the activity of both respiration and circulation, must be especially injurious, more particularly in rooms that are ill-ventilated, as most bed-rooms are.

Another object of equal or still greater importance, should be to limit in the food the supply of those materials,—such as spirituous liquors, butter, cream, fat, sugar,—which contribute to form bile,

or which increase the quantity of bile indirectly, by serving as fuel for respiration. Some of these aliments, as cream and porter, for instance, seem to be not only pernicious in this way, but also by directly embarrassing the secreting function of the liver

From these considerations it follows, that it must be especially injurious for persons who suffer from the disorders we are considering, to indulge in sleep immediately after a full meal. To lessen by sleep the activity of respiration at the very time when the materials consumed in this process are being poured in large quantity into the blood, must lead in a twofold way to accumulation of bile in the system, and favour the occurrence of a bilious attack. In this way may be explained the ill-effects of suppers in disorders of this class, and the well-known fact, that a single indulgence of this kind may bring on a bilious attack, in a person predisposed to it.

British and Foreign Medical Review, Jan., 1846, *p.* 39.

60.—*On Oxide of Silver, (Conclusion of Mr. Lane's Paper)**—I shall now refer to the special action of the oxide of silver in gastric affections; and, in the wide class coming under the designation of dyspepsia, we shall often find it a simple and efficacious medicament. One of the commonest forms of dyspepsia is constituted by a state of chronic congestion of the gastric mucous membrane, indicated by tenderness and uneasiness in the epigastrium, frequent nausea, loss of appetite, and a want of digestive power, inconvenience being experienced after eating, especially if the strict rule of diet have been deviated from. The tongue may be clean or somewhat furred, and the papillæ are generally preternaturally red and turgid. There is usually some degree of thirst, and the bowels are somewhat costive. In these cases the oxide is an effectual remedy, in conjunction with aperients and alteratives as far as may be required. These are doubtless the cases respecting which Dr. Golding Bird remarks, that "in those forms of irritable stomach, especially where an erythemic state of mucous membrane existed, the oxide of silver has been of great service."

Gastralgia, in its pathological nature, is but a violent form of the irritative dyspepsia in question, the morbid state of mucous membrane being connected with a very sensitive and irritable condition of the sentient nerves of the viscus, which may be evinced under various circumstances, and even in the opposed conditions of repletion and vacuity. In these cases the oxide of silver will often be found highly efficacious. I remember one case of cure, where the pain would recur once or twice a day with such intensity, as to compel the person to lie down immediately wherever he might be, continuing sometimes for one or two hours; other remedies had previously failed in affording relief.

When much tendency to vomit has existed, I have not found the use of the oxide of silver beneficial. Neither have I found it useful

* See Article 57.

in pure atonic dyspepsia, where the tongue was pale, flabby, and indented,—in which the experience of Dr. Golding Bird coincides; and this accords with my opinion as to the action of the remedy being truly sedative.

In cases of simple pyrosis much advantage is obtainable from the employment of the oxide of silver. The free action of the bowels has to be maintained, and the secretion of the liver regulated. Dr. Golding Bird says, with respect to pyrosis, "it requires a few days' preliminary treatment to reduce the gastritic condition, and then the oxide of silver acts well." Whether pyrosis assume a marked acid or alkaline character, I have generally found it amenable to the influence of the medicine. The combination of mild alkaline aperients with half-grain doses of the oxide twice a-day, in the form of a pill, will, in the majority of cases, readily counteract the acid form of disease. In the neutral and alkaline varieties of pyrosis, tonics are in most instances desirable adjuncts to the oxide of silver; but where there is deep-seated pain, the preliminary application of leeches, and the use of counter-irritation, are requisite. I am, however, inclined to believe, that many of these cases do not originate in the stomach, as generally supposed, but in the pancreas. I have had but little experience in cases of ropy or glairy discharge from the stomach. In one case, however, which came under treatment, the oxide certainly exerted some beneficial influence. Alterative doses of henbane, ipecacuanha, and blue pill, with mild salines, were resorted to in the first instance, and the cure was completed under the administration of the silver simultaneously with vegetable tonics.

It is, however, to the peculiar medicinal influence of the oxide of silver on the uterine system that I am most particularly desirous of directing attention; and I believe, in this respect, that I may fairly claim the merit of introducing a new and valuable remedy for many female complaints, and one which had long been a desideratum. The oxide of silver demonstrates a specific power in controlling certain states of uterine excitement; and whether such excitement be evinced merely locally by undue sensibility or secretion, or sympathetically by pain or constitutional irritation, the sedative influence of the remedy is unfailing. Of course, any primary constitutional derangement, whether plethoric or anæmic, has to be counteracted by appropriate treatment; and in some congestive states of the uterus, as of other organs, a mere sedative action not being the chief indication, the oxide of silver may not be available.

I need adduce no instances of the efficacy of the oxide of silver in the common forms of menorrhagia. Suffice it to say, that with the precautions above alluded to, I am almost invariably able to resort to the employment of the remedy with confidence and satisfaction.

Medical Gazette, May 1, 1846, *p.* 763.

URINARY ORGANS.

61.—ON GRANULAR DISEASE OF THE KIDNEY, AND ITS RELATIONS.

Bright's disease, Dr. Johnson considers, may be described as *primarily and essentially an exaggeration of the fat which exists naturally in small quantities in the epithelium cells of the healthy gland*—a fatty degeneration of the kidney analogous to the fatty degeneration of the liver, as demonstrated by Mr. Bowman.

This accumulation of fat in the secretory cells necessarily leads to the engorgement and dilatation of the tubules which they line, and one or more convoluted tubes thus gorged with fat, and projecting either on the surface of the gland, or on the surface of a section, constitutes one of the so-called "granulations of Bright." Some malpighian bodies were observed to contain no fat, whilst others contained gorged fatty cells; but Dr. Johnson has never observed in these bodies an accumulation sufficient to produce destructive pressure on the malpighian tuft of capillaries. The frequent connexion of albuminous and bloody urine with Bright's disease, and the atrophy of the kidney, are attributed by Dr. Johnson to the mechanical operation of the above-described fatty accumulation. Having alluded to the circulation of the gland as described by Mr. Bowman, he entered into a minute detail of the reasons which led him to the conclusion that the presence of albumen and blood in the urine is, in this disease, a secondary phenomenon, dependent on the previous morbid changes.

In reference to the atrophy which the kidney so often undergoes in this disease, the author contrasted the well-known peculiarities of the vascular organization of this gland with the very dissimilar arrangement of the vessels and secretory cells of the liver, an organ which appears to suffer but little from a similar engorgement in its cells.

In speaking of the *stages* of this disease, the author observed that he had no reason for believing in the existence of any congestive stage as necessarily preceding the morbid accumulation which he describes. The various forms about which so much has been said and written, he believes to depend in great part, if not entirely, on the rapidity with which the disease advances. In cases of long duration, the kidney is generally found small, contracted, and granular. When the progress of the case has been rapid, the gland is large, smooth, and mottled.

The author then dwelt at some length on the frequent coincidence which he had observed of the disease in question with a similar fatty degeneration of the liver, arteries, and valves of the heart.

From the above data, the author deduced the important *practical conclusion*, that these fatty degenerations so often conjoined are of constitutional origin, and that they must not be considered and

treated as local disorders. He repudiated the notion of Bright's disease having any specific connexion with scarlatina; neither did he believe in its alleged relation to acute inflammatory dropsy.

The causes of the disease are, according to the author, essentially debilitating: in large towns the disease is prevalent and fatal, in country districts it is comparatively rare. The disease has been artificially produced by Mr. Simon, of King's College, in the lower animals by their continued exposure to depressing influences.

With respect to the microscopical character of the urine in this disease, the author remarks:—1st, That the cylindrical bodies described by Dr. F. Simon are fibrinous casts of the tubes, frequently entangling blood-discs, oil-globules, or epithelial cells with fatty contents. 2nd, That the presence of much fat in the urine is an alarming symptom. In an advanced stage of the disease, fat rarely abounds; but, from experiments on the lower animals, as well as from observation on the human subject, it seems probable that in many cases of chronic ill-health during a period in which no especial attention is directed to the state of the urine, there may be eliminated with this secretion such an excess of fatty matter as would in reality mark the first stage of Bright's disease.

On the subject of treatment the author stated, that the obvious indications were—

1. The pursuance of a general tonic regimen in respect of diet, atmosphere, exercise, and medicine.

2. The careful avoidance of all exhausting remedies.

3. To avoid. as articles of food, fat and other highly carbonized materials. And

4. To relieve congestion of the gland by strict attention to the functions of the skin and bowels, and by such small blood-lettings as circumstances might demand.

[This was the subject matter of a paper read before the Royal Medical and Chirurgical Society, in November last, by Dr. George Johnson. In a discussion which followed, Dr. Bright observed that the conclusions of the author "bore the appearance of the greatest probability, they appeared like truth."

Dr. Copland said, it was no new doctrine to suppose that the disease originated in a mal-assimilation of the food by the digestive organs resulting from a morbid state of the blood; since he had himself published it three years ago. Dr. Budd said]

He had placed three or four patients in King's College Hospital labouring under dropsy and albuminous urine, on a diet consisting of lean meat, bread and water, and abstaining from sugar, fat, and starch. He had also administered iodide of potassium and liquor potassæ. The result of the treatment, as far as it had gone, had been quite satisfactory; but of course at present it would be premature to draw any conclusion from it.

[Dr. Johnson, the author of the paper, observed that one important practical point resulted from his observations, which had never before been insisted on, viz., the necessity of abstaining

from fat as an article of diet. Mr. Simon differed from Dr. Copland in his opinion of the treatment recommended in the paper "that it was the same as had always before been pursued," since Dr. Copland had in his *Dictionary* recommended hydragogue cathartics, which are forbidden by Dr. Johnson. Dr. Williams said]

He knew no treatment so beneficial and successful as cautious bloodlettings in the early stages, particularly in the acute form of the disease. He had recorded twenty or thirty cases of albuminuria, altogether independent of scarlet fever, and coming on as an acute disease, in which, in the early stages, he had employed cupping on the loins, hydragogue cathartics, conjoined with medicines calculated to improve the general health, with the greatest success. He had found no improvement in the condition of the urine, until these means had been applied. The enlarged and congested state of the kidney, together with tenderness over the organ, demanded this plan of treatment: depletion, on the contrary, was contra-indicated in chronic cases. He agreed with Mr. Toynbee as to the importance of attention, in the first instance, to the condition of the parenchyma of the organ, as he (Dr. Williams) considered that the deposit of fat was a secondary effect, and not the *fons et origo* of the disease. There were certain conditions of the kidneys, somewhat resembling Bright's disease, in which there was diminution of the urine with albumen, but the water of the urine was diminished in quantity as well as the natural constituents of the secretion; but here, instead of having a mottled kidney, you had simply enlargement and induration; the organ did not abound in fatty, but in granular matter; and the cells constituting the parenchyma were increased in the number, and contained granules.

Medical Gazette, Nov. 21, 1845, *p.* 1300.

[In a clinical lecture by Dr. Todd, in a subsequent number of the *Medical Gazette*, on the subject of "dropsy with albuminous urine," the views of Dr. Johnson are supported. In this lecture we find the following remarks on]

1*st.*—*The secreting apparatus of the kidney.*—This consists of highly convoluted tubes, each one at its origin, that is, at its connection with the vascular system, presenting a cyst-like dilatation, which surrounds a peculiar portion of the vascular apparatus, called the Malpighian plexus. The mass of the kidney is composed of such tubes. Their structure is basement membrane, lined with cells of epithelium. Dr. Johnson has ascertained, that in many of these cells a small quantity of fat exists. It must be remembered that the condition of this epithelium affords a most important indication of the state of nutrition of the gland. If its nutrition be perfect, then its secreting functions will be well performed, and the epithelium will be healthy; but if, on the other hand, its nutrition be impaired, one of the results will be unhealthy secretion of epithelium.

2ndly.—*The vascular apparatus.*

The renal artery breaks up in the substance of the kidneys, dividing and subdividing, till at last several small arteries are formed (*the Malpighian*), each of which passes toward an uriniferous tube, pierces its wall, and terminates in a minute tuft (*the Malpighian plexus or tuft*), within the dilated origin of the tube. Out of the tuft a small vein arises, which makes its exit by piercing the wall of the dilated extremity of the tube; the vein breaks up into a venous plexus, called the "portal," from the obvious analogy which it bears to the portal system of the liver. From the portal plexus larger and less numerous veins arise, which, by their junction, form the renal or emulgent vein.

The course of the circulation in the kidney, then, may be described as follows:—Before the blood can get to the renal vein it must pass through the Malpighian and portal plexuses; the former within the dilated origin of the uriniferous tube, the latter external to and surrounding the walls of the tubes; and this difference is very important. If an accumulation were to take place within the tubes, what would be the result? The portal plexus would be pressed, and the circulation in it retarded; the blood would consequently be thrown back on the Malpighian tuft, and congestion there would result. It is worthy of notice, that the vessels which compose the Malpighian plexus are very delicate in their texture, and peculiarly favourable to admit of the filtration of fluid; and if the congestion goes so far as to cause rupture, the red particles and fibrine escape into the tubes. Whenever you meet with serum of the blood in urine, you may at once conclude that there is congestion of the kidney—in one Malpighian plexus, at least; and whenever red globules are present you may be sure that rupture has taken place. The tubes have in such cases been found injected with blood.

[With reference to the subject of Dr. Johnson's investigations, also, we find some excellent and elucidatory remarks, which particularly corroborate the views of that gentleman, and will be a good addendum to the discussion of this subject, which took place amongst the members of the Medico Chirurgical Society. Dr. Todd asks, What is the condition of the kidneys generally, in these cases of albuminuria? and then proceeds to say:]

1. *Both* kidneys are found in a deceased state. It seldom or never happens that the disease is limited to one kidney.

2. We meet with irregular vascular congestion; the vessels are full at some parts of the organ, and empty at others, andthis gives rise to a mottled appearance on the surface of the kidney.

3. A deposit of a new matter is found either in or between the tubes of the kidney; this deposit has hitherto been called *granular.*

4. As the disease advances, the kidneys, which at first were enlarged, shrink, their cortical or external portion becoming wasted here and there, leaving depressions on the surface of the organ corresponding to the wasted portions; and thus a tuberculated aspect

is given to the kidney. The blood-vessels are obliterated in many situations, and it is impossible to inject such kidneys.

Such, then, is the coarse anatomy of this disease, as has been clearly made out by the numerous observers who have directed their attention to it. The following questions, however, naturally suggest themselves, and must be definitively answered before we shall be in a condition to determine the pathology of the disease:—

What is the nature of the deposit? How is it produced? Where deposited; in or between the tubes? Is it a product of inflammation? Is it a new element, or only an increase of a natural one?

Dr. Johnson has found that the healthy epithelium of the kidney contains fat—in small quantities, it is true, but yet sufficient, and so generally existing as to warrant the assertion that its presence in the cells, in small quantity, may be regarded as a normal character of them. It had been previously known that this is the case with the cells of the liver; but in these, fat exists in much larger quantity than in the renal epithelium.

In this disease, however, according to Dr. Johnson's most important discovery, fat accumulates in the epithelial cells of the kidney in large quantity; and it is the existence of these gorged cells which gives the appearance of a granular deposit.

Mr. Bowman had discovered that fatty liver essentially consisted in an overloading of the epithelial cells with fat. So similar are the cells of the kidney, in this disease, to those of the fatty liver, that if placed side by side you could not distinguish a renal from an hepatic cell. Both are filled with distinct oil globules, the appearance of which is so peculiar that no microscopic observer of ordinary experience could fail to distinguish them.

In these cases, the cells of the liver are often found unduly gorged with oil, exactly as in the kidney. Fatty matter, along with other materials, is also found in the arteries, and on the valves of the heart. Phthisis, too, is frequently co-existent, and tubercles, it may be observed, contain fat as well as other elements.

With regard to the question, "Is the deposit situate *in* or between the tubes?" I must remark that it is very unlikely it should select the latter situation. The tubes are placed very close together; between them there is a very small quantity of a clear homogeneous hyaline substance, in which the vessels are lodged. Again, the changes of nutrition are known to take place on the free surface of the tubes—that is, in their interior, and therefore it is most likely that any changes resulting from impaired nutrition would also manifest themselves there. You may see the fat-laden epithelium within the basement membrane of the tubes. Some years ago, I had formed the opinion that the epithelium, in this disease, was secreted in undue quantity, and distended the tubes, but I did not know that its substance was in any way changed.

When the gorged epithelium cells accumulate in the uriniferous tubes, the result is, that the tubes become dilated, the portal

plexus which surrounds them is compressed, the passage of the blood through it is impeded or prevented, and the Malpighian tufts become distended with blood, and allow serum to transude through the walls of their vessels, or, if they burst, admit of the escape of the red particles and fibrine. As the accumulation goes on, the portal plexus here and there is obliterated, and the Malpighian tufts become obliterated likewise, and atrophy of the kidney, and deficiency of its secretion ensue. As, however, many healthy Malpighian tufts remain, and secretion does not always stop, but, on the contrary, may now and then become abundant, or even excessive.

It may be now confidently asserted that this disease consists essentially in a deposit of fat in undue quantity in the epithelial cells of the kidney, associated with similar deposits, in greater or less quantity, in other organs—in the liver, on the internal surface of arteries, and of the valves of the heart; and that it is frequently accompanied by the deposit of tubercles in the lungs.

Instead, then, of the name of granular kidney, hitherto so generally employed, we must use that of "fatty kidney," as we speak of *fatty liver*.

And I may remark here, that this disease is, to all intents and purposes, of the same nature as the fatty liver, which has hitherto been chiefly known as a frequent accompaniment of phthisis.

It is true that the accumulation of fat in the cells of the liver does not lead to the obliteration of the blood-vessels of the gland, nor to a stoppage of its secretion, as in fatty kidney. This difference in the effects of the same accumulation in these two organs is due to the greater distensibility of the liver, which readily increases its size without compressing or impeding its blood-vessels; whereas, from the dense fibrous membrane which covers the kidney, and the highly convoluted arrangement of its secreting tubes, the retention of the enlarged cells within them speedily affects the vessels which play around them, and obstructs the circulation.

The frequent association of fatty liver with fatty kidney strongly indicates that the two diseases are closely allied to each other, and owe their existence to a similar or even to the same cause. There is no evidence that this disease is inflammatory. Fat is certainly not a product of inflammation, nor do we find any of the inflammatory products in the kidneys in this disease. No pus, no gangrene, no lymph, in the substance of the kidney. To explain the disease, we must look to those circumstances which favour the formation of fat: deficiency of oxygen, want of exercise, impure air, and the like.

Mr. Simon and Dr. Johnson have artificially produced the disease. They kept cats for some time in the dark, causing them to breath impure air, and to live on unwholesome food. The results were, that they were enabled to trace the disease through its three stages. They drew off the urine from the bladder by a catheter, and examined it from time to time; they found that first fat began to appear in the urine, with numerous gorged cells. There was soon a tendency to dropsy, and the urine became smoky and albu-

minous. The dropsy increased, the urine became scanty, and death from suppression followed. The state of the kidneys was exactly such as I have described it in the human system.

I confess that this appears to me to be an *experimentum crucis*. A theory of the disease had been formed, based on facts ascertained in the human subject. An animal is subjected to all those conditions which would favour the expected results, and these results have followed exactly as had been anticipated.

In the treatment of the disease, we must look to the particular stage in which we find it. If perchance the patient applies for advice in the very earliest stage, and the physician is fortunate enough to detect it, the disease may be cured. If, before mechanical obstruction and its consequences have arisen, the mode of life and habit of the patient be changed by pure air and careful attention to diet and exercise, then it is quite possible that the coming evil may be averted. Unfortunately, however, a patient seldom applies for medical aid thus early. In the second and third stages we can only palliate suffering, by relieving congestion, promoting the flow of urine, and the action of the skin; and perhaps we may check the tendency to the abnormal deposit of fatty matters, by restricting him to a diet which contains neither fat nor butter, nor any of those non-azotised substances which are nearly allied in chemical constitution to fat, and are easily convertible into it—such as starch, sugar, potatoes, &c. We must not allow fat, butter, and such things, to be taken, nor any of those substances which, like potatoe, starch, &c., are easily convertible into fat. The foregoing considerations, therefore, lead me to regard "Bright's Disease"—

1st. As one in which the existence of albumen in the urine is a concomitant, by no means an essential, feature of the disease, but a result of the mechanical obstruction to the circulation, which the morbid deposit in the kidney causes. It is, as indeed Dr. Bright himself has always insisted on, only one of those diseases which give rise to albuminous urine.

2ndly. As a disease of the blood, manifesting itself in faulty assimilation, both primary and secondary, and consequently allied to those diseases (gout, rheumatism, diabetes, &c.) which have their origin in a morbid state of the blood.

It will be for future clinical research to discover such signs of the earliest stage of the disease as will enable both physicians and patients to detect it in sufficient time to adopt the remedial measures which are so clearly indicated by its pathology.

In conclusion, in order to save myself from being misunderstood, let me say, that although I object to the term albuminuria, yet I regard the presence of albumen in the urine as a symptom of grave import. If albumen should suddenly make its appearance in the urine, and quickly disappear, little need be feared; but if, on the other hand, it continues steadily and unremittingly to show itself, then it must be looked upon as a symptom calculated to excite our worst fears. The presence of albumen is always indicative of partial or general congestion of the kidney. This congestion must

have a cause, and that cause may be either,—1. Undue attraction of blood to the organ, as from irritation, or, 2. Obstruction to the circulation in the portal plexus of the kidney, causing congestion of one or more Malpighian tufts; and this latter cause may depend either on obstruction to the general venous circulation, from disease of the heart primarily, or upon mechanical pressure of the portal plexus, by the over-distended uriniferous tables.

Medical Gazette, Dec. 19, 1845, *p.* 1444.

[Dr. Robinson, of Newcastle-on-Tyne, who has devoted much time to the consideration of this subject, (see Retrospect, Vol XI., p. 77), although he does not doubt, at all, the accuracy of the microscopical observations of Dr. Johnson, supported as they are by the concurrent testimony of so many eminent men, yet differs from him with respect to the proximate cause of the malady, and affirms that it depends upon a disorder in the circulation of the affected organ. With respect to the production of albumen, Dr. Johnson's views are identical with his own, and may be briefly expressed in Dr. Robinson's own words, as follows]

The presence of albumen in the urine is produced by, and its proportional quantity is in a direct ratio to the degree of, congestion of the capillaries of the kidney, from whatsoever cause that congestion may arise.

[Dr. Robinson concludes that the only condition required for the production of this symptom is an undue compression of the blood contained in the smaller vessels. He observes]

Much of the confusion now surrounding this subject seems to me to have arisen from the following circumstance: that since the publication of his discovery by Dr. Bright, too much importance has been attached to albuminuria as a symptom invariably diagnostic of certain peculiar structural changes in the kidney; whereas, taken *per se*, this condition of the urine indicates nothing more than the existence at the time, of some irregularity in, or obstruction to, the circulation through that gland, Hence before pathologists can arrange or discuss in a satisfactory manner the numerous and important questions connected with this disease, they must distinguish more closely and carefully than has yet been done between ordinary acute and chronic nephritis, and those peculiar forms of the latter disease in which the organ presents the morbid appearances so ably described by Dr. Bright, and so justly associated with his name. It is, I presume, to the minute anatomy of well-marked specimens of the latter class of cases, that Dr. Johnson's attention has been chiefly directed; and the question which here presents itself for examination is, now far the fatty deposit described by him is to be regarded as a *cause*, or as an *effect*, of the concomitant disorder of the circulation.

Medical Gazette, Dec. 19, 1845, *p.* 1484.

[A number of microscopical observations have been instituted by Dr. Quain, House Physician to University College Hospital, to

ascertain the correctness of Dr. Johnson's theory. In fifty cases examined, only one exhibited this fatty deposition in any remarkable degree. Dr. Williams thus speaks of this case.]

Dr. Quain examined some of the matter found in the cortical portion of Mayhew's kidneys, and it presented an unusual quantity of opaque globules, which are, in fact, fatty globules, and demonstrate, that the cacoplastic deposit was here more fatty than usual.

[Dr. Quain also says:]

I have, in many other instances, observed the presence of fat globules, but not to such an extent as to induce the belief that the presence of fat could be the only organic change which had taken place. In almost every case I found decided evidence of the presence of other deposis; of what Dr. Williams has so appropriately named cacoplastic (badly organizable) lymph, such as we find in or on other organs and tissues, which have been the seat of unhealthy inflammation or degraded nutrition. This matter has been generally observed to assume—1. The form of nucleated cells, varying in size and shape, and also in the number and character of the nucleoli. 2. As simple granular matter, the nucleated cells being fewer in number. 3. In two instances I have observed the deposit to assume a distinct filamentous or fibrous character. In the two first varieties fat globules have been noticed, as already stated, to a greater or less extent.

The seat of the deposit there was little difficulty in assigning to the substance of the kidney external to the tubes. In two recent instances, owing perhaps to improved experience in manipulating, I have been able to observe the granular matter contained within the tubes themselves.

If these observations are correct, Dr. Johnson has taken a limited view of the morbid condition of the kidney in this disease. The examinations which I have made, taken in connexion with those made by Dr. Williams, and his views as to the nature of this morbid deposit, as declared in his *Principles of Medicine*, but more particularly in reference to the present disease, in the clinical lecture already quoted from, lead to the following inferences as to the pathology of Bright's disease—viz., that it is the deposit of a badly organizable or cacoplastic matter in the cortical substance, and within the tubes of the kidney. This deposit generally takes place in an unhealthy system, as the result of congestion, produced either mechanically as by diseased heart, or by some irregularity in the function of the skin. The same effect may be produced by the circulation of stimulants, as alcohol, with the blood. Those conditions—diseased heart, perspiration suppressed by cold, or by experimentally coating the surface with substances impermeable to this secretion, and intemperate habits, are constantly found associated with albuminuria. These facts, without entering on the *causes* of the disease, are mentioned with a view of showing that congestion precedes, rather than follows, the deposit in the kidney—a view confirmed by the results of treatment.

The deposits in the kidney assume the following characters:

1. The *simple enlarged mottled kidney*, the surface of which, on removing the capsule, is generally smooth. In this the deposit consists of simple nucleated cells, more or less mixed with granular matter. This form is analogous to the hypertrophied mottled liver.

2. The *truly granular or atrophied kidney*, the surface of which is rough, irregular, and generally of a pale-reddish colour. In this form the filamentous tissue, contractile in its nature, as such formations always are, exceeds the quantity of the cellular or granular matter. The latter I have observed extending to the convoluted extremities of the tubes. The contractile tissue surrounding the tubes and bodies can be readily supposed to give rise to the rough or granular formation. This form resembles the hob-nailed or gin-liver.

3. The *large, flabby, fatty-looking kidney*. In this the quantity of fat exceeds the amount of the other matters present. The fat is present in the substance, and probably, as shown by Dr. Johnson, in the tubes themselves. This resembles the fatty degeneration of the liver.

We have thus *three principal forms* which this disease has been generally found to assume: minor modifications of these may be produced by the relative proportions in which these deposits are present. There is no reason to infer that one condition is the necessary antecedent of another, but that the character assumed in the first instance may be permanent. A case which has recently been under Dr. Williams's care in this hospital, seems to confirm this view. The patient had been under observation during more than five years, and after death, the kidneys were found large, mottled, and non-granular. It proves, at least, that this form of mottled kidney is not necessarily an acute disease.

Lancet, Nov. 29, 1845, *p.* 594.

[In a communication to the *Lancet*, of February 21st, there is an allusion to Dr. Johnson's paper on Albuminuria, in which the writer states that he has for upwards of four years been aware of the fact, that fatty deposition in the substance of the kidney formed the characteristic feature of one form of Bright's disease; and he states that he obtained his information by reading "*Gluge's Untersuchungen.* The statement is as follows:]

Second Form of Bright's Disease: Cirrhosis; Deposition of Fat Globules in the Cortical Substance.—First stage.—Deposition of free fat globules in the cortical substance, the vascular system of the kidney not being obviously affected.

Second stage.—Deposition of yellow altered fat globules within the tubuli of the cortical substance. Blood-vessels unaffected. To this stage apparently belongs the case described by Valentin.

Third stage.—Deposition of peculiar altered fat corpuscles in

regular rows in the site of the tubuli of the cortical substance, the tubuli themselves having been destroyed.

So much for the originality of the idea; now for its correctness as an exclusive doctrine. I apprehend that any one, who has examined many kidneys of persons cut off with the symptoms of "renal dropsy," will have no difficulty in rejecting the notion of the fatty nature of the disease as invariably connected with fact. The truth is, that the minute anatomy of the kidney, when diseased in the mode to cause discharge of albuminous urine, anasarca, and all the well-known train of evils, varies in different cases. Gluge clearly saw this, and describes two other distinct kinds of morbid change as being present in certain cases. These kinds of change (his first and third forms), are "inflammation," and "induration of undetermined form."

It is necessary to mention, that Gluge gives the details of numerous microscopical communications, from which his general doctrine is derived.

Lancet, Feb. 21, 1846, *p.* 230.

[The peculiar deposition in the kidney, marked by an albuminous state of the urine and dropsical effusion, first pointed out by Dr. Bright, is not peculiar to this organ: deposited in liver, it was termed by Laennec *cirrhosis*, which consists of an *abnormal development of fibrous tissue*, and Dr. Eicholtz remarks:]

In this disease, as in granular kidney, through the development of a new tissue in the substance of the organ, the capillary system of vessels, and later on vessels of larger size, become compressed, and the affected parts are thus rendered quite anæmic, so that frequently, when cut into, not a drop of blood can be obtained from them. In advanced stages of both diseases also the affected organs present a globular appearance, and become indented with cicatrix-like depressions, through contraction of the newly-developed fibrous tissue. From this characteristic appearance Henle was led to apply the name cicatrix-tissue to the newly formed material. That granular degeneration of the kidney and the liver do sometimes occur coincidently is quite certain, and this circumstance might already have led to the opinion, that both the degenerations cannot be the result of an especial affection confined exclusively to the organ attacked, but that the cause thereof must have a deeper seat.

[Dr. E. supposes, that tuberculous cavities may be healed by the deposition of this substance in the lungs, in consequence of a peculiar condition of the blood, different from what occurs in phthisis]

Medical Gazette, Nov. 21, 1845, *p.* 1287.

[Dr. Eicholtz describes numerous post-mortem examinations in which this fibrocellular substance was found deposited, not only in the kidneys, but in the liver, lungs, and spleen. Sometimes in one

viscus only, at other times in several, sometimes the new deposits seemed to have put limits to an old disease, as tuberculous formation in the lungs. He concludes by saying:]

In the foregoing part of this essay there are cases mentioned in which the kidneys alone and the liver alone were affected; others in which the kidneys and liver together were affected; others in which the spleen and liver; others in which the kidneys, liver, and spleen; and lastly, others in which the liver, kidneys, spleen, and lungs, were similarly affected. Diseases which are characterised by the deposition of a certain product in different organs, or which affect simultaneously different systems, we have long since agreed to regard as morbid conditions of the mass of blood by which all parts of the body are supplied with nutritive materials; such, for instance, as tubercular phthisis, typhus, the acute exanthemata. That in these diseases the form of the morbid process is not the same in all organs and tissues, and that the symptoms vary, requires no exposition. Each one of the diseases in question is invariably the same in its nature, only the form of the morbid process, and the attendant symptoms, are determined not only by it, but also by the nature of the individual organ attacked, by its anatomical and physiological peculiarities. Inasmuch as it appears from the results of the above examinations that the same degeneration may occur simultaneously in different organs, that it can even supplant another disease and render it harmless to the system, so may all doubt respecting the nature of this affection vanish, and that view according to which the affection is regarded merely as the symptom of a peculiar diathesis be fully established; a view which has already frequently been advanced, although its correctness has been hitherto inferred only from symptoms. Now, however, it has received anatomical proof furnished by the results of the above autopsies. Much has been already, and still continues to be said, about Bright's disease of the kidney, yet its importance, so far as we regard it as an affection confined exclusively to the kidney, will gradually disappear, in proportion as we become better acquainted with the microscopic characters of those changes which take place in other parenchymatous organs. The changes which occur in the liver have already been submitted to these microscopic examinations; not so those of the enlarged, hardened, and reddened spleen.

The conclusions which I would draw from the foregoing observations are somewhat to the following effect:

1. There is a disease commonly attacking the liver, kidneys, and spleen, which is dependent upon an abnormal condition of the blood, and is characterised by the excessive development of a substance resembling fibro cellular tissue, by which the peculiar glandular structure of the affected organs becomes compressed, and their functions interfered with.

2. This peculiar abnormal condition, when attacking the kidneys, is known by the name of granular degeneration of these organs. If we distinguish from this granular degeneration, (or Bright's

disease, as it is called) the cancerous, tuberculous, and even the purulent affections of the kidney, which are sometimes liable to be mistaken for this disease, we shall still have two forms, or rather two stages, of the disease left; the one characterised by a deposit of fat, the other by the development of a kind of fibrous substance. I would reject the idea of there being seven distinct degrees of this degeneration of the kidney, which is maintained by many writers; these degrees are merely artificial, and the adoption of them can be of no possible advantage; the view, however, of there being two stages of the disease is founded on nature, although it must be admitted that by the adoption of such a view little is gained towards combating this disease. The anatomical and pathological researches which have been hitherto made respecting the nature of Bright's disease can by no means be regarded as conclusive, because in no case have the obtained results corresponded with each other. Hecht observed fat, Gluge inflammatory globules, whilst Henle and myself noticed the development of a kind of fibrous tissue. If, however, it be allowable to draw a conclusion from a single observation, it will be easy to reconcile these various results by considering the pathological appearances presented in case V. For in this case the coincident occurrence in the diseased kidneys of fat and inflammatory globules, together with cells, which were undergoing conversion into fibres, sufficiently indicates, as was stated before, that in the first place an albuminous fluid containing fatty matter was excreted; that the fat and albumen had been converted into inflammatory globules, which globules had been changed into cells, and these cells developed into fibres. Now, in comparing the results of the above with the description given by Hecht, Henle, and Gluge, it is probable that Hecht, who observed fat, saw the disease in its first stage; Henle and myself saw it in the second; whilst, again, Gluge and myself saw it when the first stage was passing into the second. There is nothing very remarkable in the idea of fat globules being converted into fibres. Fat and albuminous fluid form the basis of every organic structure, both in the ovum and in all physiological and pathological secretions.

But, whether the fatty degeneration always passes on to the fibrous one, or whether, again, the former must precede the latter, or whether the fatty matter, in chemical combination with the albumen, may not be converted at once into exudation-corpuscles, or into cells, or possibly even at once into fibres, without first assuming the form of fat globules,—which seems not at all improbable—are questions which can be determined only by future researches.

3. A similar fatty and fibrous degeneration occurs in the liver. With regard to the relation in which these two degenerations stand towards each other, the same question presents itself here as was considered in the previous paragraphs. The peculiarities of a liver thus degenerated—so far as can be exhibited by the knife and by injections—together with the symptoms which characterise this peculiar condition during life, have been recently given by Oppolzer

in a treatise on granular liver; in which work the pathological appearances presented by the liver are attributed to obstruction of the branches of the portal vein, resulting partly from inflammation and dilatation of the bile ducts; partly from exudations of various kinds, sometimes of fat, sometimes of other materials. Oppolzer also distinguishes granular liver from the fatty liver, although he gives no microscopic analysis of this degeneration.

Although Gluge considers the fibrous degeneration to belong only to a high degree of the disease, which he names *stearose*, and to be a somewhat subordinate affection, yet this view is not confirmed by the foregoing observations.

4. Most interesting are those cases of commencing cure of pulmonary phthisis, in connection with this fibrous development in the liver, kidneys, and spleen. That the tuberculous diathesis was in those cases entirely put an end to, appeared not only from the obsolete condition of the miliary tubercles (which were characterised by their singular hardness, resulting from a fibrous envelope, by which they were individually surrounded), but also from the more or less perfectly formed cicatrices which had occurred. The tuberculous masses (some of which were soft, others dry and shrivelled) which were found in the interior of the contracted cavities must be regarded as the remains of an already extinct diathesis, and as no longer injurious to the surrounding healthy pulmonary tissue, from which they were separated by the cicatrix-tissue, developed around them. We have thus an example of one diathesis being supplanted by another; the tuberculous one removed and another developed in its place: for which latter we have as yet no name, and the symptoms of which are, pathologically speaking, granular degeneration of the liver and kidneys, and the peculiar condition of the spleen above described.

If a tuberculous cavity can heal, so, of course, may the phthisical diathesis become extinct, no subsequent accession occur, no fresh material be deposited; the cicatrisation of the cavity may occur either without any disturbance taking place in other organs, or else the process may be an excessive one, and development of the fibrous substance, which is to affect the cicatrisation, may also take place in other parts, in which there is nothing to be cicatrised; as, for instance, in the liver, the kidneys, and the spleen.

Since after the above remarks it cannot be denied that a fibrous degeneration may proceed from a fatty degeneration, so may another explanation, different to any yet given, be offered of the occurrence of fatty liver in tubercular diatheses. It cannot be correct to regard the fatty liver as compensating for deficient respiratory functions, because this degeneration is peculiar to the tubercular diathesis generally, and not merely to pulmonary phthisis. Besides, the liver is not the only organ in which fatty degeneration occurs: fat, whilst it disappears from all other parts, is frequently deposited in internal organs. Thus, Bizot observed in tuberculous disease not merely a general loss of substance in the heart, with thinning of its walls, particularly those of the left ventricle, but he has also

given the particulars of four remarkable cases, the subjects of which were females, who died of pulmonary phthisis, and in all of which the lower half of the anterior wall of the right ventricle was converted into a fat-like tissue, the muscular substance being pale, thin, and seemingly in part absorbed. If we may consider a natural cure in its strict sense to consist in one organ becoming sound at the expense of another inferior to it in importance, then I would regard the peculiar deposition of fat, which occurs in tubercular diathesis, as an effort of nature to restore to its normal condition that state of blood which is found in the tubercular diathesis: which effort is not in all cases restrained within given limits, but may become excessive, and thus endanger life in another way.

Medical Gazette, Dec. 5, 1845, p. 1384.

[On the pathology of albuminuria, Dr. Ayres says:]

In papers already before the public in the *Lancet*, I have entered, as fully as our present knowledge will admit, into the chemical changes of the blood and urine which accompany this affection, and I have ultimately referred it to a deficiency of the process of respiration, whereby albumen and the other proteine compounds do not undergo their natural decomposition, but are retained and accumulated in the system, giving rise to the congestion of the kidney, and other parts, and ending in the effusion of albuminous fluid into the cellular tissue, and escape of a similar fluid in the urine.

I therefore looked upon the affection of the kidney as a secondary disease, dependent on a previous state of the blood, and I showed that it was a natural result of the continued ingestion of alcoholic fluids, which being decomposed or oxygenated with greater facility, and in preference to the proteine compounds, give rise to an accumulation of the latter, and the retention of a proportionate quantity of water, to hold them in solution. Hence arises deficiency of perspiration, and the usual diminution in the quantity of the urine, as well as the diminution of the principal normal constituent of that secretion—urea. Hence, consequently, hyperæmia, (not of blood-corpuscles, but of albuminous fluid), and the congestion of the capillaries of both the internal organs and the cellular tissue, which ends in effusion of an albuminous fluid in the cellular tissue, and albuminous urine. I was not aware, at the time I wrote my last paper, (*Lancet*, October 25th, 1845), that any observations had been made on the amount of lithic acid in albuminous urine; but on reference to Simon's Anthropochimie, (ii. 417,) I find that Becquerel has examined the urine in seven cases, and that the acid was deficient in all of them, the proportion varying from two-tenths to six-tenths of a grain in one thousand grains of urine. In the single case in which I examined the urine for lithic acid, it was in excess. I had heard that a paper was to be read by Dr. Johnson, at the Medico-Chirurgical Society, on this subject; but, unfortunately, other engagements prevented my attendance. I therefore took an early opportunity of reading the report of his paper in

the *Lancet*, and certainly felt much surprised at discovering that the whole phenomena of albuminuria were to be referred to deposit of fat in cells, and urinary tubes of the kidney, blocking them up, and causing congestion, and the effusion of albuminous fluid as the result of the congestion. Hence Dr. Johnson would make this deposit of fat the primary, and albuminuria the secondary disease. I certainly thought his conclusions very strange, as they could not be reconciled with the fact, that a normal quantity of urine is not unfrequent, and an excessive flow of urine has occasionally been observed. Nor does he give any explanation of the fact, that considerable deficiency of urea almost invariably occurs in albuminous urine. Another difficulty arises: if fat be deposited in the tubuli uriniferi, how is it that it does not make its appearance in the urine itself? In all the analyses of albuminous urine I have met with, and certainly, in the analyses I have made, no appearance of fat has been discovered. It is not probable, that in the numerous analysis of albuminous urine, so extraordinary a circumstanee would have been overlooked. Yet, if Dr. Johnson's statements be correct, fat ought to be present in the secretion. Dr. Johnson seems to take a very limited view of the subject.

A still more important paper has appeared in the *Lancet* of to-day, (November 29th), by Dr. Richard Quain, in which the results of a long series of observations are given, that are in full accordance with the opinions I have put forward in the papers before alluded to. He finds that there are three chief forms of disease of the kidney connected with albuminous urine; the mottled kidney, containing an abnormal development of nucleated cells, with more or less granular matter; the granular and atrophied kidney, containing filamentous contractile tissue, and less cellular and granular matter; and the large, flabby, fatty-looking kidney, where fat is present in the substance and in the tubes.

Now the inferences he deduces from his observations are, that a cacoplastic, or badly organized deposit, occurs in the kidney, not as a primary, but as a secondary affection, dependent on the state of ill health; of disease of the heart; irregularity in the function of the skin, or the circulation of alcohol in the blood, as in dram-drinkers. He therefore allows, and supports the opinion, that albuminuria depends on a peculiar state of the system, preceding, and being the cause of, the local disease of the kidney, and not that the disease of the kidney is the cause of the albuminous state of the urine; and here his observations are strongly corroborative of the opinions I had previously published. It will be seen from my last paper, (*Lancet*, October 25th,) that I put forward an hypothetical statement of what I supposed to be the case of the mottled appearance of the kidney; namely, that in the continued flow of an albuminous fluid through the tubular structure of this organ, a deposit of albumen occurred, which gives rise to the mottled appearance. As we know that when the proteine compounds are solidified in the tissues, the change is effected by the formation of nucleated cells, or filamentous tissue, we might *á priori*, have expected that the

deposit would have the appearances Dr. Quain so well describes. It is true, that the deposit of fat in the third form of disease of kidney may have some influence on its secretion, but the increase of size would show, that the chief cause, even in this instance, is congestion of the organ, produced by either of the causes already enumerated.

The perfect accordance which subsists between the pathological observations of Dr. Quain and my own chemical researches on the subject, has given me great pleasure.

Lancet, Dec. 27, 1845, *p.* 701.

[In Dr. Alexander Wood's "Survey of the Recent Literature of the History and Treatment of Diseases," published in the *Northern Journal*, he gives us some good remarks on the treatment of this formidable disease. In its acute form, the first indication is to remove the congestion of the kidneys. All are agreed that this is best effected by *blood-letting*, regulated according to the intensity of the disease, and the patient's strength. Next, the function of the skin is to be restored, and the dropsical effusion to be got rid of; the former intention will be best fulfilled by keeping the patient in a warm room, giving mild diaphoretics, and the use of the warm or vapour bath. Dr. Barlow particularly recommends tartar-emetic, since it not only restores the function of the skin, but it subdues inflammation, and equalises circulation. To remove the dropsy, we rely on diuretics and purgatives; by some, diuretics are considered objectionable, as they produce a determination of blood to the kidneys, already in a state of congestion. On this subject, Dr. Wood remarks]

Plausible as such reasoning may appear, I question if, in actual practice, the use of diuretics is ever really injurious; it has certainly been condemned both by Dr. Bright and Dr. Osborne; but, on the other side, we have the testimony of Dr. Christison, who "has very seldom witnessed decided diminution of the dropsy, unless where diuresis or purging was either artificially induced at the time, or arose spontaneously," and has "even repeatedly seen the albumen disappear under diuretics."

I have found great benefit from the use of nitre in this disease, which has certainly a remarkable effect in removing the uneasiness in the loins, so often complained of; its diuretic effect may be amply secured by combination with digitalis and cream of tartar. To secure the full benefit of this remedy, however, it must be given in very large doses, which, if the salt be largely diluted, may very safely be done.*

* In the Posological Table of Duncan's Dispensatory, the dose of this salt is set down as from gr. x. to half a drachm. In Dr. Christison's, as gr. x. to one scruple as a sedative refrigerant, and two scruples to one drachm as a diuretic. It may, however, be safely given in much larger doses. Dr. Brocklesby gave two drachms dissolved in a quart of gruel, three, four or five times a-day, in acute rheumatism; and in the same disease, Martin Solon has given from half an ounce to 15 drachms, in divided doses, in the 24 hours.—(Bul. de Therap. 1843).

[This disease is far more difficult to treat in its chronic form, on account of its complications. It is of the first importance to keep up the function of the skin; and warm clothing, diaphoretics, and the warm bath are mostly to be depended upon:]

Dr. Bright has occasionally seen the character of the urine change, and the dropsical effusion disappear under the use of tincture of cantharides, given in doses of from four to twelve drops in some emulsion. Dr. Wells, narrates five cases of dropsy, with, coagulable urine, treated with this remedy, in doses of from thirty to sixty drops in the twenty-four hours. In three of these the improvement was very decideid; in one the albumen disappeared from the urine; in the remaining two no benefit seemed to result from its use. M. Monneret has since strongly recommended the same medicine. M. Gutbrod tried the ioduret of iron in two well marked cases of the disease with success. M. Alken has found benefit result from the employment of hydriodate of potass, and iodine ointment. M. Rayer has found no benefit to result from the external application of mercurial or iodine ointment.

Dr. Rees, following out his idea of the pathology of the disease, of which a summary has already been given, recommends the plan of treatment usually resorted to in anæmic diseases. viz., chalybeate tonics, saline purgatives, and nutritious diet, and strongly condemns depletion.

Dr. Copland has given equal quantities of the tincture of cantharides, and the tincture of sesqui-chloride of iron, with marked benefit in a few cases.

In the more advanced states of the disease, the same author has seen more advantage from the preparations of iron judiciously chosen and combined with other remedies, than from any other class of medicines.

[In the treatment of the complications, Dr. Wood first speaks of dropsy, and observes that]

Dr. Christison is disposed to place much reliance on the combined use of cream of tartar and digitalis.

From a drachm to a drachm and a half of the former substance is given three times a day, the patient taking at the same time a pill, containing one or two grains of the powder of digitalis, or twenty drops of the tincture may be given in a little cinnamon water. The diuretic effect of these medicines may be increased by the exhibition of a blue pill every night, until four or five have been taken. Occasionally diuresis may be established by the administration of an emetic of ipecacuanha and tartar-emetic, and sometimes even by the action of a hydragogue cathartic.

Should these fail, we are recommended to have recourse to squills, infusion of broom tops, or spirit of nitric ether, or Hollands with water, or carbonate, nitrate, or acetate of potass.

Many of these are condemned by Dr. Copland, as liable to disorder the stomach, and thereby farther impair digestion and assimilation, and thus accelerate the unfavourable progress of the disease.

M. Rayer prefers the decoction of the wild horse-radish to all other diuretics.

Dr. Christison draws an admirable distinction between the mistaken employment of diuretics as a supposed cure for the disease, and their judicious use as a means of combating this particular symptom. He is not inclined to attach any value to the theoretical arguments of those who have supposed that diuretics may act injuriously; he condemns them in the early stage, because during the state of general reaction, they do not generally excite their proper action, and the urine is restored to its healthy amount with much greater certainty by subduing the reaction; that is, by antiphlogistic treatment, and also because there is no special indication for their employment, unless when dropsy is present.

Rayer has often seen a remarkable diminution, and often a total disappearance of the effusion, under the use of Seidlitz or Pullna water. He also recommends cream of tartar, in half ounce doses. Dr. Christison thinks favourably of gamboge, in doses of five, seven, or rarely nine grains, given once every two days. To prevent it griping, he recommends its minute division to be secured by trituration, with the bitartrate of potash.

[Affections of the *Digestive Organs*, accompanying Bright's kidney, are difficult to manage, but much may be effected by a proper regulation of the diet, perhaps more than by medicine.]

Creosote is strongly recommended by Dr. Christison, who administers it twice, thrice, or oftener, in the course of twenty-four hours, dissolved in an ounce of some aromatic water. The taste is, however, so repugnant to some, that I have preferred prescribing it in the form of a pill; one drop of creosote, two grains of rhubarb, and one grain of extract of gentian, readily form a convenient pill.

Opium is also sometimes of service, especially the sedative solution. One case which had resisted all other treatment, yielded to the use of a pill containing half a grain of nitrate of silver, and the same quantity of extract of opium.

The operation of all these remedies will be much aided by the application of sinapisms, turpentine epithems, or a cantharides blister exterally; in the latter case, the blistered surface may be sprinkled with the muriate of morphia.

Diarrhœa may be checked by chalk, astringents, and opiates; in severe cases the acetate of lead, with opium, may be given; and if all these fail, strychnine, in combination with opium, will sometimes succeed.

Northern Journal of Medicine, Dec., 1845, *p.* 404.

62.—*Treatment of Diabetes Mellitus.*—By Robert Dick, M.D.—As the cause of diabetes is uncertain, I shall say nothing regarding it, except that perhaps an inordinate use of crystallized sugar and of saccharine aliment is, if any known cause be admitted, the one best authenticated, Of the treatment also (which I shall not discuss minutely), the management of diet and of the digestive

organs must constitute a main feature. And here I would suggest a principle somewhat at variance with established practice and opinions, which is this:—While I should certainly exclude from the patient's diet, crystallized sugar and any saccharine aliment which is observed palpably to augment the gravity of the urine and diuresis, yet I would hesitate about restricting the food to azotized substances. We must remember that sugar appears to be formed, not merely in primary assimilation from the ingesta, but also in secondary assimilation from the tissues. We must also consider that it is not sugar that causes the disease, but a certain morbid action that gives rise to the sugar. Till this morbid action of the primary and secondary assimilating processes is corrected or subdued, sugar will continue to be formed, even though it be rigidly excluded from the diet: it is formed, as emaciation proves, from the tissues. Hence, rigorously to exclude non-azotized, and, perhaps, saccharine aliment, is probably but to force the disease to attack (so to speak), for want of materials, the living tissues themselves. We would, therefore, allow farinaceous food at least: and in this view Dr. Prout concurs, though he does not assign the reasons we have ventured to adduce. I admit that sometimes great temporary amendment seems to follow the absolute use of animal food: but unless the cure is prompt and complete, which it rarely is, the circumstances of the patient are, soon after, aggravated, and the fatal event is apparently accelerated. It is worthy of note, that, not less as regards morbid than normal secretions, a diminution or a suppression of them is commonly a greater evil than an excess. The profuse biliary discharges of an irritated liver are accompanied frequently with excitement, griping, and even inflammatory and febrile symptoms: from all which, however, the patient may recover: but suppressed bile, for the most part, speedily induces coma and death. The exertions of a preternatural amount of urea is usually marked by symptoms of some urgency: its non-elimination seems to produce fatal poisoning. A similar principle probably holds in regard to sugar and oxalic acid. And not at all unlikely in cases where we flatter ourselves that we, or nature, have cured these and other diseases attended with overt morbid secretions, because these excretions have disappeared; they have merely become latent, and the maladies on which they depend have assumed their gravest and last phase.

Medical Gazette, Nov. 28, 1845, *p.* 1334.

63.—*Case of Diabetes Mellitus treated with sub-acetate of Lead.* —By J. Kirby, Esq.—[Mr. Kirby's patient, a Mr. Walker, was twenty-one years of age, of nervous temperament, and affected with serious pulmonary disease. On the 20th of December, 1838, he was passing ninequarts of urine in the twenty-four hours—it was saccharine; the thirst was not excessive, but the skin was remarkably dry and of a chalky feel. Mr. K. states]

I prescribed one grain of subacetate of lead, with a minim of sedative opium, and a very minute portion of ipecacuanha, to be

taken every second hour; with egg diet and mulled porter, as his ordinary drink. In four days he announced a remarkable decrease in the quantity of urine, and a considerable improvement in his general feelings.

The 9th of January he called on me again, having taken his pills every second hour for twenty days. He reports a declension of appetite and increased debility; is costive; tongue clean; cough less troublesome, and the pulse is much less frequent. For the six preceding days the urine varied from seven to eight pints; to-day, but five, and is natural both in odour and colour.

Ordered: an oil draught, and the pills to be resumed to-morrow.

In a month from this date, the pills which had been steadily used, were laid aside, the urine being nearly healthy.

Mr. Walker, considering himself as well of his urinary disease, discontinued his visits to me. I afterwards learned that his phthisical affection made rapid progress, and that he died, anasarcous, early in summer.

[Mr. Moore, of South Anne-street, analysed the urine at the request of Mr. Kirby, and from his notes it appears that from December to February, the time Mr. Walker was taking the subacetate of lead, there was a marked alteration in its specific gravity, which should encourage us to make use of this remedy in an earlier stage of the malady.]

Dublin Medical Press, Nov. 12, 1845, *p.* 307.

64.—*On Dropsy with Albuminous Urine after Scarlatina.*—By Dr. O'Ferrall.—[In this disease, the antiphlogistic treatment is the best in a majority of cases, whether we consider the presence of albumen in the urine symptomatic of Bright's disease, or of nephrites. The disease, however, may be partially subdued, and albumen still remain in the urine, with pallor of skin.]

When these two symptoms survive all the others, the patient is falling into the anemic state. The phenomena of anemia are quickly superadded, and, if sought for, will generally be found. The blanched face, will be accompanied by a similar condition of the velum palati and fauces, and a remissement with bruit musicale will be discovered above the clavicle. The appearance of the urine has generally indicated a mixture, more or less considerable, of the colouring matter of the blood. If nitric acid be added, the albuminous precipitate will carry this colouring matter with it to the bottom of the vessel.

I cannot doubt, that this condition depends on passive congestion of the kidneys, succeeding to a more active state, and the treatment suggested by this view of the case, is that which I recommend for your adoption. The blood appears to undergo a gradual deterioration from the daily loss, and the indications are, therefore, 1st, to arrest this insidious drain upon the system; and, 2ndly, to repair the anemic state by the employment of chalybeates.

The acetate of lead is the remedy which has fulfilled the first indication. Two or three grains may be given thrice a-day, with the

addition of a little acetic acid and distilled water. To this remedy should succeed the iron, the best preparation of which in this case, appeared to be the muriated tincture. It is often surprising, the rapidity with which the symptoms will yield to this succession of remedies. I have seen the urine, which for weeks gave, to nitric acid, a copious deposit, return to its normal state after a few doses of the acetate of lead. In one case, I succeeded with the tincture of the muriate of iron alone, but only after a more prolonged use of the remedy.

[Dr. O'Ferrall's experience in these affections may be summed up under the following heads.]

1st. That the albuminuria of scarlatina, may be regarded as connected with active hyperæmia of the kidney; for which, some modification of antiphlogistic treatment is, in the early stage, required.

2nd. That the early symptoms having been subdued, a passive congestion of the kidney may remain, maintaining an albuminous or serous hæmorrhage, and finally producing the anæmic state.

3rd. That the former condition may be occasionally controlled by the acetate of lead, and the latter, then, effectually removed by the usual chalybeate treatment.

Dublin Hospital Gazette, Jan. 1, 1846, *p.* 145.

65.—*Dropsy with Albuminous Urine after Scarlet Fever.*—By Dr. Todd.—[Whenever lithic acid or albumen is found in the urine, it denotes an irritable state of the kidney, requiring time for its being subdued. On the actual condition of the gland in such cases, Dr. Todd remarks:]

The epithelium is so freely formed as to fill up the tubes; there is, indeed, a process of desquamation on the mucous surface of the kidneys similar to that which takes place on the skin. When these particles of epithelium pass off, as they will do generally after a time, then the dropsical symptoms will subside; hence it is most important to keep up cutaneous action until the renal secretion be completely restored, lest such matters as ought be carried off by the skin should find their way to the kidney, and the renal irritation be thereby increased. When the irritation continues unabated, all the worst consequences attributed to Bright's disease may occur, and the patient will die from suppressed urinary secretion, with all the effects of a retention of urea in the blood. And it may be noticed, that it is in the mild forms of the disease that the dangerous sequelæ are most to be apprehended, the poison having been very imperfectly or not at all eliminated.

[Dr. Todd alludes to the case of a girl who was admitted into King's College Hospital, with dropsy, following a mild attack of scarlatina. She died, and on inspection of the kidneys, the tubes were found loaded with epithelium, indeed quite clogged up with it. Although the quantity of epithelium was large, it was healthy in character: the force of the heart was entirely cut off, and venous congestion commencing in the malpighian tufts was the result.]

It is plain that this disease is different from Bright's disease of the kidney, although it produces the same mechanical effects, and is accompanied by very similar constitutional phenomena. In this disease the epithelium is healthy in quality, and superabundant in quantity; but in Bright's disease it is unhealthy, being loaded with fat. I will not say that in this latter disease the epithelium is *formed* in undue quantity, but from its size and the tortuousness of the tubes it *accumulates* in greater quantities than it ought. In both cases the same mechanical effect on the kidney is produced, and the consequence is, that in both albumen appears in the urine. At length, however, that secretion becomes diminished in quantity, urea accumulates in the blood, and then symptoms of poisoning by urea show themselves.

It may here be remarked that urea in the blood does not poison unless there be no vent for it through the kidneys. I once injected half a drachm of urea into the vein of a dog, and the only effect produced was an excessive secretion of urine. The place where the dog was kept was literally flooded in an hour or two by the frequency and quantity of his micturition. If you find abundance of urea in the blood, and little in the urine, symptoms of poisoning will soon come on, if no improvement take place.

Medical Gazette, Dec. 26, 1845, *p.* 1494.

66.—LECTURES ON THE URINE.

By Dr. ALDRIDGE, Dublin.

On the Putrefactive Fermentation of the Urine.—[Under circumstances favouring the process, the urine, like other organic fluids, is liable to ferment—a suitable temperature, atmospheric air, and a ferment to cause the chemical change in the molecules to take place—the same conditions, in short, that other organic fluids require to undergo the putrefactive fermentation. The contact of atmospheric air, however, is not always indispensable to fermentation, although it more or less promotes it. Sugar may decompose into carbonic acid and alcohol, without the contact of air, because the constituents of these substances are already contained in the sugar. There must be air in the acetous fermentation, since a quantity of oxygen is required both for the removal of the hydrogen, as well as for the formation of the new compound.]

Like sugar, urine can ferment without the presence of atmospheric air; the contact of this gas promotes the process, and the liquid will ferment more rapidly, at blood heat, in an open, than in a well stopped phial; but it is capable of putrefying in the latter; and it is well ascertained that this change is capable of taking place in the bladder, a viscus which, except under extraordinary circumstances, does not contain air.

The substance which usually acts in the capacity of a ferment in the urine, is a nitrogenised extractive matter. This substance, when separated from the other elements of this secretion, very rapidly undergoes spontaneous putrefaction. If urea or uric acid

be isolated, either of these substances may be kept, either in a dry state or in solution, for a considerable time without change. Dissolved in the urine, in company with the extractive, they, however, very quickly ferment—just like the sugar along with yeast; so that this extractive may be regarded as fulfilling the same function in urinous, as the yeast does in artificial fermentation.

Occasionally this extractive matter actually becomes converted into yeast. In the fifth number of the *Dublin Hospital Gazette*, is an abstract of a memoir by M. Bouchardat, in which he describes the manner in which yeast is produced. It has long been known that yeast consists of globules, visible in the field of the microscope, varying in size and form according to the circumstances of their formation. Now, M. Bouchardat shows that the contents of these globules is invariably a nitrogenised substance approaching in composition to albumen and fibrine, and that this substance in the yeast globules is contained in a membranous envelope. These globules form themselves when any of the albuminous elements are contained in a saccharine solution; and these conditions are present in the urine whenever that fluid contains sugar. Now in disease, this secretion sometimes contains large quantities of sugar, and in perfect accordance with the premises, yeast globules under such circumstances invariably become formed. But the extractive matter of the urine does not sufficiently approach to the composition of albumen to produce a perfect yeast: the globules thus formed, unless albumen itself be accidentally present, are incapable of exciting the vinous fermentation, instead of which they produce what is called the viscous fermentation, the products of which are lactic acid and mannite,—the sweet principle of manna. The latter, however, has been ascertained by M.M. Boutron and Fremy, not to be a necessary product; and, indeed, I have sought for its presence in fermented diabetic urine without success: but lactic acid is under such circumstances evolved in considerable quantities, and is the cause of *saccharine urine becoming more and more acid by being kept*. Now this is exactly analogous to what M. Bouchardat has shown to take place when the brains of adult and young animals are successively employed as ferments in saccharine solutions; in the former case the fermentation which takes place is of a different nature from that which occurs in the latter.

During the process of fermentation, the contents of the yeast globules become changed: a slow oxidation takes place, new principles become generated, and they lose their power of instituting fermentation in saccharine liquids. The globules now unite together, one after the other, and true confervoid filaments become formed. These vegetables, thus curiously generated, get the name of *torula*, and although produced originally without seeds, contain in every cell, numerous spores called collectively the endochrom, and which it is probable are capable of producing plants similar to the parents.

We may perceive from the foregoing observations, that diabetic urine, or that which contains sagar, during its fermentation pro-

duces yeast, lactic acid, and a vegetable called Torula. That the acid generated under these circumstances is the lactic, I have proved by the addition of oxide of copper and slacked lime, in the manner described by M. Pelouze, in a memoir, an abstract of which is given in the 15th number of this Journal.

Urine which does not contain sugar, forms during its fermentation acetic acid. The presence of this acid in putrid urine has been ascertained by M. Liebig. In my last lecture I have shown you that it is from that portion of urinary extractive which is soluble in alcohol, that acetic acid is generated in fermentation, and at the same time I furnished you with reasons for believing that this extractive soluble in alcohol is a combination of a nitrogenous substance, with something resembling sugar or dextrine. That grape sugar does not exist in healthy urine can be proved readily enough, but that some of the other varieties of sugar may be present in this secretion seems exceedingly probable: and, indeed, in no other way can we account for the tendency to the production of acetic acid.

It is not only probable that sugar is contained, in some form or other, in the urine, but also in the perspiration, and for a similar reason, namely, the formation of acetic and lactic acids. Ordinary perspiration contains lactic acid, and in the profuse sweats of rheumatic fever, the sense of smell can detect the odour of acetic acid. The sweat also contains ammonia: Mr. Faraday permitted some clean sand previously destitute of ammonia, to pour across his hand, when, after this brief contact, ammonia could be detected in it. Neither lactic nor acetic acids, nor ammonia are contained in the blood. That which escapes from the blood to form the secretion of the skin is its serum: this fluid is chiefly a solution of albumen; the water evaporates; the albumen dries into a varnish that protects the highly sensitive surface, which varnish is called cuticle; but this cuticle must itself decay, and it is most likely from its decomposition that the ammonia and acetic or lactic acids originate.

Albumen is formed in vegetables (from whence all the albumen of animals is derived) by sugar combining with ammonia, and the mixture losing a certain quantity of water and oxygen. Four atoms of sugar and six of ammonia losing thirty atoms of water and four of oxygen, can furnish one atom of albumen. If albumen is formed by the union of sugar and ammonia, it is plain that the two latter compounds may be formed by the decomposition of albumen. It is likely that the albuminous cuticle may suffer this waste, and the sugar fermenting as fast as it is generated may produce either lactic or acetic acids. And as with the skin, so with the lining membrane of the urinary passages: these also sweat; their perspiration is in like manner, serous; the albumen in the same way, cakes into a modification of cuticle, which is called epithelium; and this epithelium in part escapes unchanged, in part decomposes, it is likely, into ammonia and sugar; and the latter, by its fermentation, generates lactic or acetic acid, according to the nature of the ferment.

Although acetic acid is formed during the fermentation of urine, it does not necessarily on that account acquire an acid reaction; on the contrary, this fluid by putrefaction, except in diabetes, becomes alkaline. This alkalinity is due to the decomposition of the urea. Urea is composed of the radical of carbonic acid (carbonic oxide= CO) and the radical of ammonia (amidogene=NH_2 :) to convert urea into carbonate of ammonia, it is only necessary for it to appropriate the elements of an atom of water; and inasmuch as urea is the preponderating element in the urine of the mammalia, the carbonate of ammonia which in this manner becomes generated, bestows its character on the results of fermentation of this fluid, and the product is consequently alkaline. Now the earthy phosphates which we noted in our last lecture as constituents of the urine of carnivorous mammalia, are rendered soluble by an excess of acid; and this excess being neutralized by the ammonia proceeding from the putrefaction of the urea, these phosphates are no longer capable of remaining in solution, and are consequently precipitated: the phosphate of lime in the form of an amorphous powder, the phosphate of magnesia in combination with ammonia, in crystals, to which are given the name of ammoniaco—magnesian phosphate.

Uric acid, likewise is apt to ferment: this substance is a compound of urea, and a peculiar substance named by Liebig urile: urile is a compound of two atoms of carbonic oxide and one of cyanogen; it differs from oxalic acid merely by having an atom of oxygen replaced by an atom of cyanogen; oxalic acid being

$$=C_2\,O_3;\ \text{urile}=C_2\left\{\begin{matrix}O_2\\ \text{---}\\ \text{cy}\end{matrix}\right.$$

Now, it is clear that by exchange with the elements of an atom of water, oxalic and hydrocyanic acids are capable of being produced:

$$C_2\,O_2\,Cy + H\,O = C_2\,O_3 + Cy\,H.$$

but the hydrocyanic acid seems immediately to react on water, forming formate of ammonia; for cyanogen you will recollect, consists of two atoms of carbon and one of nitrogen; and formic acid of two atoms of carbon, three of oxygen, and one of hydrogen; ammonia consists of one atom of nitrogen and three atoms of hydrogen: so, if you suppose one atom of hydrocyanic acid to react on three atoms of water, you have only to imagine the nitrogen of the former to be replaced by three atoms of oxygen; and the three atoms of oxygen of the latter to be replaced by the atom of nitrogen, and the result will be formic acid, and ammonia:—

$$C_2\,N.H. + O_3\,H_3 = C_2\,O_3\,H + N\,H_3$$

Now, the urine of birds we have seen in our first lecture to be principally composed of uric acid; and during its putrefaction, oxalic and formic acids, and ammonia become abundantly generated. This putrefied urine constitutes the manure called *guano;* and if you refer to the 15th number of the *Dublin Hospital Gazette,* you will find its composition to be chiefly urate of ammonia, oxalate of ammonia, and lime, and certain salts, amongst which formates are capable of being recognized.

The foregoing considerations lead us to perceive that many products proceed from the fermentation of the different elements of the urine. The extractive matters may yield yeast, acetic acid, and ammonia; the epithelium may give origin to sugar, lactic or acetic acids, and ammonia; the urea gives rise to carbonate of ammonia; and the uric acid to oxalic acid, formic acid, ammonia, and, it may be, traces of hydrocyanic acid.

But the important pathological fact is, that these decompositions may take place independently of each other, and even while the urine is yet contained within the system. In our last lecture we have seen that in the herbivorous mammalia the urine is discharged alkaline, containing very little urea; this proceeds from the decomposition of the urea into carbonate of ammonia within the organism; and, in disease, a similar chemical change occurs in man. When the human animal is afflicted with gout, the urinous extractive undergoes the acetous fermentation, and the urine consequently becomes highly acidified; and the uric acid being liberated from the bases through whose agency it had been dissolved, by the acetic produced, precipitates under the form of crystals. In other cases the uric acid alone ferments, and, as a result of its decomposition, oxalate of lime becomes generated.

The products of these several changes become of immense importance in the diagnosis of disease; and this is the point of view under which they are chiefly interesting to the physician.

Dublin Hospital Gazette, Nov. 1, 1845, *p.* 81.

[Dr. Aldridge next adverts to the *characters of the urinary secretion, in a state of disease.*]

The first thing that attracts your attention, upon proceeding to examine a specimen of urine which you suspect to be morbid, is its appearance; whether it be colourless, amber, saffron, red, &c.; whether it be transparent or turbid. You then test it with red and blue litmus papers, alternately, to ascertain whether it be acid in its reaction, neutral, or alkaline. You next determine its density by a specific gravity bottle, or an urinometer. And, finally, you set some of it aside, to observe whether it will deposit a cloud or sediment, or throw up to the surface a cream, or crystalize on the sides of the vessel. The urine which you thus examine shonld be submitted to observation as soon as possible after emission; it ought to be collected in a perfectly clean vessel; if the patient have leucorrhea, or is menstruating, it should be removed by the catheter; its density should be taken at a constant temperature, (60°F.); and the test glass in which it is permitted to deposit ought to have a calibre of at least half an inch in diameter.

[Different persons secrete different quantities of solid constituents in the urine, hence the specific gravity varies; indeed, it depends on the quantity passed in a given time. Dr. Aldridge observes:—]

It may be taken as an approximation to the truth, that when the average density is from 1,020 to 1,025, the quantity of urine passed in twenty-four hours is from a pint to two pints and a half; when the average density is from 1,015 to 1,020, the quantity is between two and three pints; and when the specific gravity averages from 1,010 to 1,015, the quantity is from two pints and a half to four pints. Now, when these relations are not maintained, the chances are, either that the solid constituents of the urine are abnormally increased or diminished, or that some new and morbid element is added to the urine. Let us suppose that the quantity of urine secreted by an adult man in the course of a day be a pint, and that its density be 1,010, that is probably a case of suppression of urine, and the continuance of such a state would most likely be followed by the ordinary symptoms of that disease. Again, if an adult secreted three pints of urine per diem, whose specific gravity was 1,025, that person's urine might owe its high density to an excessive and diseased secretion of urea, but more probably to the addition of sugar or albumen. These anomalies become much more important signs of disease when the comparison is made between the secreted fluids of the *same* individual at different periods.

In endeavouring to ascertain the reaction of the urine by means of blue and red litmus, you should note the alteration, if any, which takes place when a minute's time has elapsed; sooner, the reaction may not have taken place, and a prolonged immersion may deceive, by washing out the colouring matter

If the urine be very acid in its reaction, and deposit a red, pink, buff-coloured, or white precipitate, upon being allowed to cool in a tall glass vessel, the chances are that this precipitate is composed of urates or uric acid uncombined. If, upon pouring out the urine, the bottom of the vessel be stained with an even powdery coating of the deposit, it is likely to be the lithates; if hard crystalline grains adhere to the sides and bottom of the vessel, uric acid is probably present. In the former case the precipitate is usually copious, and dissolves upon the application of heat; in the latter the sediment is generally scanty. The former precipitate presents the appearance of a powder when viewed by the microscope; the latter, that of yellowish crystals, in diamond shaped-plates or prisms. Either precipitate, if placed on a bit of glass, and dissolved in a glass of nitric acid by a gentle heat, then evaporated to dryness, and held over strong water of ammonia, so as to be exposed to the action of the escaping gas, will yield a magnificent red colour, produced by the formation of murexide.

If either an acid, neutral, or alkaline urine be turbid on emission, deposits a white, yellowish, or red sediment, and is not rendered transparent by the application of heat, it contains either one or more of the following substances:—phosphates, oxalate of lime, cystine, mucus, pus, or blood.

If it is rendered transparent by the addition of acetic acid, the sediment is composed of phosphates. If dissolved by water of ammonia, the precipitate is cystine. If unaffected by either of the

above named reagents, but dissolved by nitric acid, it is oxalate of lime. If the sediment be whitish, and undissolved by any of these means, the chances are that it is pus or mucus—if red, that it is blood.

It is, however, by the microscope that the discrimination of these different precipitates is most easily and permanently effected. The earthy phosphates appear as amorphous powders; ammoniaco-magnesian phosphate is seen under the form of transparent triangular prisms, with the ends cut off as inclined triangles; oxalate of lime appears as octohedral crystals; cystine as five-sided plates clouded in the centres; mucous and pus globules as minute, irregularly spherical bodies, with granulated surfaces; and blood globules as bodies still more minute, of the shape of a shilling, and yellowish colour.

The phosphates are seldom found in urine, unless it be alkaline, neutral, or at least very feebly acid. The other elements which have been mentioned may occur in urine, whether acid or alkaline. When mucus or pus occurs in alkaline urine, the globules become in great part destroyed, and the pus or mucus becomes converted into a gelatinous tenacious mass, whose properties are sufficiently characteristic.

When urine continues turbid or milky, after being allowed to stand for some time, this appearance is due to oil, divided as in an emulsion throughout the fluid. This oil can be separated by agitating with ether, in the proportion of one-third the bulk of the urine, and then permitted to settle: when, after a time, the ether will swim at the top, holding the oil in solution, which may be obtained by the evaporation of the ether.

The different sediments of the urine vary in the facility with which they subside. The epithelium, except when pus is present, constitutes the lowest stratum; the lithates or phosphates, when present, form a layer over the epithelium; and the blood globules, if such there be in urine, form the uppermost stratum. However, this order is completely deranged, if the liquid be agitated after the sediments have been formed.

You will recollect that the foregoing description relates to recent urine; when putrefaction sets in, the urine ordinarily becomes alkaline, phosphates are deposited, and a film of extractive, mixed with crystals of the double phosphate of magnesia and ammonia, forms on the surface.

In the qualitative examination of the urine, it is not only necessary to study the deposits, clouds, and cream, but also to investigate the nature of the dissolved constituents. In the present state of our knowledge, the most important of these soluble elements are bile, albumen, and sugar. The best test for bile that I am acquainted with, is that recommended by M. Donné; to drop, at a short distance from each other, on a plate of glass, urine and nitric acid, when the liquids, gradually spreading, at length, mix; the line where the two fluids come in contact may be examined by an achromatic microscope, and if bile be present, the result of this mutual reaction will be the production of a green colour.

Albumen is easily detected by the joint influence of heat and nitric acid. If urine becomes turbid when heated, and precipitates a white sediment upon the addition of nitric acid, it is most likely to contain albumen. Even under such circumstances there are certain fallacies, and these I shall endeavour, by and bye, to point out to you.

The presence of sugar is beautifully manifested by Mr. Moore's test. Boil the suspected urine with about an equal bulk of water of potash; if sugar be present, the liquid will assume a deep porter or beer colour, in proportion to its quantity.

You perceive that for the qualitative examination of the urine very few instruments or reagents are requisite. A microscope, with a power of three hundred diameters, a few test glasses, and phials containing nitric and acetic acids, water of ammonia, and water of potash, with some slips of blue and reddened litmus, and an urinometer, are all that are necessary. A few drops of nitric acid added to a given specimen of urine, will throw down the uric and hippuric acids; after the addition, set aside for some hours, and these acids may, by their microscopic characters be readily discovered in the deposit. When the addition of nitric acid causes a whitish precipitate, which does not disappear upon the application of heat, you may be sure that the effect is produced by the presence of albumen. If the nitric acid causes a greenish coloration of the liquid, it shows the presence of bile. Nitric acid is also employed for detecting the presence of urea, but I will describe to you the method of its use for this purpose, when we come to the quantitative analysis of the urine.

When ammonia or potash is added to the urine, it causes the precipitation of the phosphates—the phosphates of lime and magnesia being amorphous powders; and the ammoniaco-magnesian phosphate which is formed under these circumstances being a different salt from that which I described as being common in neutral or alkaline urine, containing twice the quantity of ammonia, and crystallizing under the appearance of stars, with six or eight foliated rays.

In applying heat to the urine, the best way is to have the liquid contained in a test glass, and to hold the latter obliquely over the flame of a spirit lamp, so that the heat may first reach the upper part of the fluid; in this way, by comparison with the lower part of the liquid, you can best observe the changes produced.

In a case where there is but one morbid product present, nothing can be easier than the qualitative examination of the urine. It is only when you have a combination of differently morbid conditions, that difficulty arises. I shall now endeavour to point out to you the means of unravelling some of these complicated mixtures.

Suppose there was presented to you a specimen of urine to examine, which was high coloured, neutral, with a yellowish amorphous deposit; that upon the addition of nitric acid and agitation, this deposit did not seem to dissolve; and that upon the application of heat no apparent change took place. The urine in

this case would be albuminous, with a deposit of earthy phosphates. The urine did not coagulate by heat, on account of its alkalinity; for neutral or alkaline urine will not coagulate by heat, although albuminous; and the coagulation of the urine by nitric acid, would disguise the solution of the phosphates by the same reagent. In instance, acetic acid would dissolve the phosphates without coagulating the albumen; and nitric acid and heat would afterwards detect the presence of the latter.

Again, suppose a specimen of urine, high coloured, acid, and depositing a copious powdery sediment, which disappears upon the application of a gentle heat, but upon raising the temperature to ebullition, a copious white and flocculent precipitate is thrown down. The urine in this case would be a highly concentrated specimen, containing a more than ordinary proportion of the earthy phosphates; and Shaffner has shown that solutions of the phosphates of magnesia and lime are decomposed at a boiling temperature, subphosphates being precipitated. That the phosphates of the urine are frequently precipitated by ebullition, was first pointed out by Dr. Rees, and it is now a phenomenon sufficiently familiar. In this case the addition of a little nitric acid, causing the resolution of the precipitate, would point out its difference from albumen.

Let us suppose another specimen of urine—high coloured, transparent even in the cold, and alkaline, which would remain unchanged by the application of heat, but which would instantly precipitate upon the addition of acetic acid. Such a specimen would consist of a highly concentrated urine, in which the urates were kept dissolved by an excess of alkali, but upon the latter being saturated by an acid, they would instantly precipitate. That the sediment proposed under such circumstances was composed of urates, could be easily proved by their disappearing upon the application of heat.

The foregoing are some of the most common and difficult complications which you will meet with in practice; but a little experience will soon enable you to detect their true nature.

Dublin Hospital Gazette, Nov. 15, 1845, *p.* 102.

Rheumatism of the Kidneys.—This is the only disease in which I have ever observed an excessive secretion of urates. You are to recollect that a specimen of urine permitting to subside on cooling, a bulky deposit of urates is no proof that the individual who passed it secreted an excess of these salts; for their subsidence may have proceeded not so much from their superabundance as from a deficiency of the water necessary for their solution. This is what usually takes place in febrile diseases; the quantity of urine becomes diminished, from a secondary irritation of the kidneys; and the solid constituents remaining unchanged, the sparingly soluble superurates have not enough of water for their solution in the cold. The urine, consequently, throws down what is called a lateritious sediment. But in rheumatism of the kidneys an actually

increased secretion of uric acid takes place; and although, when the disease becomes chronic, an absolutely superabundant quantity of urine may pass daily, it will deposit superurates copiously upon cooling. If a patient subject to rheumatism in other parts, complains of burning heat in the loins, and passes abundant urine, which upon cooling deposits superurates, I should be led to diagnose rheumatism of the kidneys.

Gout of the Kidneys.—When gout attacks the kidneys, the urine undergoes the acetous fermentation which I mentioned in my first and second lectures. This new acid liberates the uric acid from combination, and this latter, consequently subsides in its crystalline form. If the attack of gout be severe, the urine may also become bloody and albuminous; but a permanent deposition of crystalline uric acid from the urine would be sufficient of itself to make us diagnose gout of the kidneys. This deposition should, however, take place soon after emission, to justify this diagnosis; otherwise, if the urine be saccharine, the lactic acid formed by fermentation may soon throw down crystals of uric acid. And I have known a similar deposit to have taken place from the vessel, into which the urine had been received, accidentally containing some drops of nitric acid, which had not been washed out.

Dublin Hospital Gazette, Dec. 15, 1845, *p.* 186.

Treatment of Urinary Disease.—It has long appeared to me a grievous error in the treatment of urinary diseases, the habit of regarding the alterations of the renal secretion in a purely chemical light. Exhibiting acids, if the urine be alkaline, and alkalies if this liquid be acid; and modifying the food, so as to diminish the chances of sugar getting into the system in cases of diabetes mellitus: these simple and most erroneous principles satisfy and guide the majority of practitioners in their treatment of urinary diseases. This error is not peculiar to the therapeutics of renal lesions: we every day see alkalies exhibited in pyrosis, not with the idea of curing the lesion of innervation, which constitutes the disease, but with the hope of neutralising the acid secretion which is the effect. Yet, how much opposed to rational pathology is the theory upon which treatment of this kind is founded? and how ineffectual is it, usually for the relief of those diseases to which it has been applied? You will see patients suffering from gastralgia and pyrosis, taking alkalies in large quantities for weeks and months, without obtaining any permanent benefit: you will see patients emaciated and debilitated from chronic nephritis, or, as it has been most erroneously called, the phosphatic diathesis, taking the mineral acids, for a very long period, without the urine becoming a bit less alkaline. Others, having gout or rheumatism of the kidneys, will have consumed pounds of the bicarbonates of potash and soda; during their use lithates, or crystallised lithic acid, will cease to deposit; but as soon as they intermit the employment of these salts, the uric acid, unaltered in quantity, and merely kept

dissolved by the alkali, will, upon the disuse of the latter, precipitate in as large quantity as ever. Theory and experience equally demonstrate the inutility of the chemical treatment of urinary diseases.

Why not treat urinary diseases on the ordinary principles of therapeutics? There are really no lesions discoverable in the various parts of the urinary apparatus, but such as you meet with in other portions of the organism. Plastic and suppurative inflammations, gout, rheumatism; alterations of nutrition, secretion, and innervation; these are all common to the different viscera of the cranium, the thorax, and the abdomen. It appears reasonable to expect, that the means experienced to be generally serviceable in a diseased condition of one organ, will be found equally beneficial in a similar disorder of another organ; although it is certainly true that the utility of the same medicine will be found to vary according to the organ affected with a given lesion; and calomel in iritis, tartar emetic in pneumonia, turpentine in sciatica, colchicum in gout, iodide of potassium in periostitis, and opium in peritonitis, are examples of medicines which manifest an antagonism to inflammations in certain organs, much superior to what they display in other instances; still they present resemblances in their physiological and therapeutical effects sufficient to entitle them to be regarded as a distinct class of medicines; and in many cases they may be advantageously substituted for each other. Not the less, therefore, is the knowledge of the lesions of the urinary organs, and of accurate diagnosis, guides to the groups of therapeutical means amongst which you will have to select; although the determination of the particular remedies, especially serviceable in any given lesion located in some portion of the urinary apparatus, may be the specific province of experiment.

A strict adherence to system would therefore lead me to describe the treatment of urinary diseases, in the suite of their pathology and diagnosis; and if I pursue on the present occasion a different system, it is not because the pathology and diagnosis of these diseases are insufficiently developed for the purpose; for I consider that although we have much to learn with respect to the diseases of every viscus, the knowledge of urinary disorders have so rapidly progressed within the last few years, as to have now arrived, at least, to a level with other departments of medical science: but, unfortunately, this knowledge is but very little diffused among the members of the medical profession: philosophical views of the nature of disease are seldom entertained; the majority of practitioners still continue to wander through the misty regions of diathesis; and in place of looking through symptoms into lesions, are contented to rest on the superficial and sensible consequences of diseased action.

To render this lecture as generally useful as possible, I shall therefore tell you the treatment proper to each urinary indication, instead of that required by the governing lesion. And in this way,

I hope to be enabled to bring together into one view, the pathology diagnosis and appropriate treatment, in such a manner, as that each of these subjects may throw light upon the others.

Treatment of Diabetes Insipidus.—This is the name given to a symptom of urinary disease, in which an excessively increased quantity of water is habitually secreted from the kidneys, without any alteration of the solid elements of the urine. The specific gravity of this liquid, becomes consequently very much reduced. This symptom appears to depend on altered innervation, and it is best treated by the internal use of antispasmodics and mineral tonics, with the external employment of stimulating liniments to the spine.

Treatment of Lithic Acid Deposits.—These deposits are either crystalline or amorphous. When the urine for any length of time continues to deposit after each emission, the rhombic prisms of lithic or uric acid, this circumstance is an evidence that the kidney is affected with gout: under such circumstances the immediate danger is the formation of a calculus; and to obviate this it is desirable to exhibit either bicarbonate of soda or potash, in doses of ten grains or a scruple, dissolved in half a pint of water three times a-day, so as to render the urine neutral or alkaline: but this effect being obtained, the practitioner ought to direct his efforts to subdue the gout, which is the cause of the symptom. If the urine be albuminous or sanguinolent, and there is much pain in the loins, it shows the attack to be of an inflammatory character, and to require a treatment locally antiphlogistic: otherwise recourse may be had to colchicum, or whatever remedy the practitioner prefers in the treatment of podagra.

If the lithic acid deposit be amorphous, its precipitation may depend either upon an excessive secretion of the solid constituents of the urine, or upon a deficiency in the secretion of water. In the former case, the specific gravity of the urine becomes normally increased in proportion to its quantity: and this symptom is usually dependent on rheumatism of the kidney. The treatment should, of course, be directed to the rheumatism; at the same time it is desirable to hold the excessive lithates in solution by means of alkalies. Iodide of potassium is a medicine that fulfils both indications, and given in doses of five or ten grains three times a-day, will usually be found serviceable.

When the amorphous lithates become deposited from a deficiency of water, the quantity of urine will be ascertained upon inquiry, to be less than usual. Sometimes, however, the patient is deceived as to this point, by the concentrated and stimulating secretion demanding frequent evacuation: under all circumstances it is most desirable, for diagnosis, that the daily discharge of urine should be measured. Diminution of the watery part of the urine, may be produced by irritation of the kidneys either idiopathic or symptomatic; or it may be the result of a lesion of innervation; or it may be the consequence of a vicarious watery secretion from some other organ. When the deposited lithates are of a brick red colour,

the scanty secretion of water which produces their subsidence, is the effect of the first of these causes: in that case, a fever, either essential, or symptomatic exists; and the remedies calculated to remove the fever are those fitted to increase the urinary secretion, and diminish the lithic deposit. If the deposited lithates be pale or buff-coloured, the chances are that they are caused by a nervous diminution of the watery element, connected with that weakened action of the ganglionic nervous system to which the name of dyspepsia is given; if such be the case, the internal exhibition of a scruple of alum in half a pint of water, three times a-day, will soon remove the tendency to lithic acid deposit. A pink colour of the sediment is usually found in connection with an imperfect discharge of the biliary functions.

Treatment of Phosphatic Deposits.—These deposits when principally crystalline, generally depend upon the urine being deficient in acidity: in that case, the treatment will be described under the head of alkaline urine. Sometimes, when the bladder has been long diseased, a copious deposit of amorphous phosphates subsides from the urine; it is always under such circumstances accompanied with pus; and the indications which are thus afforded for treatment I shall hereafter mention.

Treatment indicated by weakly Acid, Neutral, or Alkaline Urine.—In my last lecture I pointed out the circumstances under which the urine becomes diminished in acidity, whether in health or in disease. If the urine be neutral, or weakly acid, from a vice of secretion, it usually shows that the kidneys are inflamed. I have already described to you the differential diagnosis of acute nephritis, chronic nephritis, and the renal complication of typhus fever. In acute nephritis, the employment of general and local depletion, as well as the exhibition of emollients, and contrastimulants, must be regulated by the severity of the disease, and the state of the constitution, according to the ordinary principles by which inflammations are combatted: I am persuaded that I have seen much benefit from large (ϑ) doses of hydriodate of potash in this disease. In chronic nephritis, you will find great benefit from local depletion and counter-irritation, especially from the establishment of setons in the neighbourhood of the affected glands. In the renal complication of typhus, large blisters to the loins, and the internal administration of wine, are usually indicated; small doses of oil of turpentine will, in these cases, often increase the quantity and restore the acidity of the urine.

Treatment of the Oxalate of Lime Deposits.—Although there can be little doubt, that oxalic acid is generated in the urine by the putrefactive decomposition, and often occurs subsequent to secretion, in a manner totally independent of disease, yet it is also certain that this decomposition frequently results from an essential vice of secretion. The morbid conditions which give rise to this change are not yet known; but one thing is well ascertained, that in every instance of the kind there is frequent desire to pass water, pain in passing it, and that the secretion is commonly loaded with

epithelium. These phenomena proclaim the existence of irritation of the mucous membrane. Sometimes the crystals of oxalate of lime, like those of uric acid, cohere in the calyces and infundibula, forming calculi, which produce paroxysms of nephritic cholic, by their descent into the bladder. In such cases, inflammation of the lining membrane, may be mechanically produced; but it is doubtful whether the symptoms of mucous irritation which usually accompany the oxalate of lime deposit, are due to the irritating contact of the sharp crystals. Whatever is the cause of the mucous irritation, it constitutes the lesion which in oxalate of lime diathesis, you are especially called on to remove; and its successful treatment requires no little delicacy in the application of therapeutical agents. Unlike acute mucous inflammation, depletion and emollients will act in this irritation injuriously, if employed in the first instance; you must have recourse to tonics immediately, such as the mineral acids, vegetable bitter astringents, &c.; and having employed these means for some time, you will then find the greatest benefit from alkalies largely diluted. It will be often necessary to alternate these methods of treatment for a considerable period, but you will generally find that ultimate benefit will be derived from steady persistence in their use. The form of tonic mixture which I usually employ in these cases is the following:

℞. Infusi cascarillæ ℥6; nitratis potassæ ʒj; acidi nitrici diluti ʒ1½; tincturæ opii ʒj; M sumat cochlearia duo ampla ter in die.

Treatment indicated by Albuminous Urine.—In my last lecture I have sufficiently pointed out the method of distinguishing mottled kidney from acute mucous inflammation, the two principal pathological causes of albuminous urine. In my fourth lecture, I gave you reasons for regarding the disease which terminates in mottled kidney, as essentially an inflammation of the lining of the urinary conduits. I must refer you to the same lecture for a list of the other diseases in the course of which the urine becomes albuminous: but for the present, we shall confine ourselves to the treatment of the two diseases alluded to. These diseases, according to the views which I have laid before you, are both acute inflammations, standing in the same relation to each other as croup, bronchitis of the large tubes, and capillary bronchitis. Their treatment must consequently be very similar; active depletion both local and general, the continued exhibition of nauseating doses of tartar emetic; hydrogogue purgatives; warm baths; and all the resources usually had recourse to in active inflammations of internal viscera. Modern therapeutics have made no more valuable discovery than that of the utility of alkalies in cases of mucous inflammation. The diseases under consideration are particularly suited for continued alkaline medication, subsequent to the employment of more energetic agents. These means will require to be strenuously persisted in: but it is a common character of urinary inflammations, much to diminish the strength, and to deteriorate the constitution: this is particularly true of Bright's disease; and when this cachectic condition is pro-

duced, you will be forced to intermit your active antagonism to the local disease, for the purpose of obviating the still more imminent dangers resulting from an impoverished blood, and an exhausted fibre. Under such circumstances you must depend on an active counter-irritation, especially by setons, to control the urinary inflammation.

Treatment of Diabetes Mellitus.—If you agree with me in the pathology of this disease, developed in my fourth lecture, you will easily be enabled to deduce what treatment is most appropriate. I look on saccharine urine as depending on a modification of the epithelial secretion produced by an asthenic condition of the urinary conduits. If this be the case, medicines calculated to exalt the tone of the secreting capillaries, are those best fitted to restore the natural function. Accordingly, experience tells us, that the balsams, ammonia, strychnia, and other excitants, are the medicines found most beneficial, when the perspiratory secretion is suppressed; when on the contrary, the functions of the skin continue unimpaired, much benefit is often derived from the internal use of chalybeates, alum, sulphate of zinc, or other metallic astringents. The whole system commonly shares either directly or consecutively in the debilitated condition which exists in the capillaries of the conduits, and it is therefore most desirable to employ every dietetic means calculated to increase the patient's strength. It is well, therefore, to give a moderate proportion of animal food, porter, &c. as much as is consistent with a proper exercise of the digestive functions; but from the exclusive animal regimen recommended by some, I have seen decidedly injurious results, but never any lasting benefit.

Treatment indicated by Purulent Deposits.—In my lecture on the pathology of urinary diseases, have been described the different sources of pus in the urine: and in my lecture on the diagnosis of urinary diseases, I have mentioned the methods of distinguishing these pathological causes from each other. We have seen that the urinary mucous membranes pour out pus when in a state of asthenic inflammation; and this circumstance sufficiently indicates the appropriate treatment. Tonics are the medicines chiefly to be relied on in these cases: decoction of the leaves of chimaphila corymbosa, diosma crenata, or arctystaphylos uva ursi; or of the rootof cissampelos parcira; combined with mineral acids will usually be found serviceable: chalybeates are also often of efficacy in these cases.

Treatment of Hœmaturia.—In my fourth lecture are enumerated the different sources which give origin to bloody urine. It is not our province to speak of wounds or contusions of the urinary organs, nor of general diseases, such as scurvy or purpura; we shall therefore confine our attention to vicarious and essential hæmaturias. I have told you that the seat of vicarious hæmorrhage occurring in the urinary organs, is usually the lining membrane of the bladder. These cases you treat in the usual manner that other vicarious hæmorrhages are combated. The most effica-

cious treatment of essential hæmaturia consists in the exhibition of astringents, such as tannin, or styptics, such as oil of turpentine; the use of the latter is very apt, however, to convert the hæmaturia into a nephritis, but in this case the reaction of the urine with litmus paper affords a most accurate test, for pointing out the critical time when you should stop the exhibition of the medicine, and cup the loins.

I have now given you the principal indications of treatment, afforded by modifications of the urinary secretion: and at this point the present course of lectures must close. It has been my object to steer as clear as possible from the published works on the subject of urinary diseases; at the same time that I wished to furnish you with principles which might guide you to a philosophical pathology, a safe diagnosis, and a scientific and successful treatment.

Dublin Hospital Gazette, Jan. 1, 1846, *p.* 147.

67.—*A simple introduction to the Clinical Chemistry of the Urine.* —[Those practitioners who have the opportunity, ought to make themselves well acquainted with Prout's, Bird's and other treatises on this subject. The following remarks, however, will prove highly useful to those who fear such a voluminous work as Dr. Prout's. The fluid to be examined should be kept free from all admixtures. The quantity of urine passed during the twenty-four hours should always be noted, as also what urine has been examined, whether the morning's, or that passed during the day. Its specific gravity is to be carefully observed, also its reaction on test paper, and whether there is any sediment deposited from it.]

The acid and alkaline reaction is best shown by blue and red litmus paper respectively, these colours giving a more extended range, and thus constituting a more delicate test than the yellow and brown of turmeric paper.

If the urine is acid, turbid, with a red deposit staining the sides of the vessel, we know at once that the urates are in excess; if alkaline, or even acid, of a pale colour, slightly turbid, with a light cloud floating in it, and an irridescent pellicle on the top, we presume the phosphates to be in excess, and this the more if the urine is highly offensive to the smell, and full of mucous strings. A clear pale urine may be found in connection with hysteria, with Bright's disease of the kidney, or with diabetes. A smoky colour is very indicative of Bright's disease; and a greenish tint should remind us to look for crystals of oxalate of lime.

The specific gravity is best estimated by means of a common hydrometer, made for the purpose, contained in a strong glass tube, in which it may be floated when required. The results are not so accurate as those obtained by a specific gravity bottle and a balance, but the facility of application compensates for the little inaccuracies that may arise from its use. It should be allowed to sink gently down to its level, as all the fluid that collects upon it higher up tends to weigh it down, and makes the urine seem of

lighter specific gravity than it really is. High specific gravity, that is to say, all above 1,025, may denote diabetes, or may result from the patient at the time employing diuretic salts. Low specific gravity, or below 1,014, may be connected with granular degeneration of the kidney. The specific gravity, in connection with what has been already noted concerning the colour and reaction of the fluid, is to guide us in the subsequent application of our tests.

Heat and nitric acid are, for most purposes, enough; their effects are best witnessed in common test tubes, into which the urine may readily be poured, even from a large vessel, by using one tube as the guide, down the side of which the fluid may run into the other.

Urine of a low specific gravity had better be heated, and if a precipitate forms, a few drops of nitric acid should be added. If the precipitate re-dissolves, it is to be considered indicative of the presence of the phosphates in excess; if it do not dissolve, but be rather increased by the addition of the acid, it is albumen. It is to be remembered that a precipitation of the phosphates by heat may take place in acid as well as in alkaline urine.

To urine of a higher specific gravity, nitric acid may be added at once. Every precipitate that forms may be uric acid or albumen. To determine this, the fluid should be heated, when the precipitated uric acid will be re-dissolved, the albumen will remain coagulated. A partial or entire solution of the precipitate by long continued heat, *may* denote so interesting a form of disease, that the beginner would do well to call in the aid of a more experienced chemist under such circumstances. The results thus obtained should not be lost; the tubes must be set by for a day, and then it should be noted by the aid of a common pocket measure how high the precipitate stands in the fluid, occupying, for example, half, a third, or an eighth part, as the case may be. The quantity of little crystals of uric acid that have dusted over the inside of the tube should also, at the same time, be looked to.

But, suppose no precipitate forms, a reference to the specific gravity must tell us whether there is anything more to be expected, or whether we may presume that we are dealing with healthy urine. If the specific gravity be high, and the reagents have produced only slight effects, the nature of the case may tell us whether it be worth while to look for sugar in the urine. This is most satisfactorily effected by means of fermentation; about ʒ ij. of the urine being introduced, with a little yeast into a phial with a perforated cork, through which the longer leg of a bent tube passes, and the whole inverted in a cup of water, where another phial, filled with water and inverted, is to receive the short leg of the tube. At a temperature above 60°, any sugar that may be present will begin to be decomposed, and carbonic acid will collect and remain for some time unabsorbed in the other phial. If no gas collects, there is no sugar in the urine; but there may have been albumen, which we have failed to detect from not adding enough

acid, for a little nitric acid only renders the albumen uncoagulable —forms, in fact, a soluble nitrate, which is not precipitated by heat. A few additional drops of nitric acid will prevent any error from this cause by at once precipitating the albumen.

It remains now only to consider those cases where the urine evidently contains some soluble matter in excess, which, however, is neither albumen nor uric acid, and to notice a few appearances which are sometimes perplexing to a beginner. A free effervescence may arise either from the presence of the carbonate of an alkali, or the decomposition of urea, or that of uric acid. The first case might be solved by looking to see what the patient is taking, all neutral salts with vegetable acids being converted into carbonates of that base during their passage into the urine. The second is best determined by setting aside ʒ ij. of urine in a saucer, with about a quarter of its volume of nitric acid, of course, without having applied heat, when the appearance of crystals denotes an excess of urea. The third is best solved by adding a few drops of any acid to the urine in a tube, and observing, as before recommended, the number of crystals that have formed by the ensuing day.

The flaky precipitates recognised to be albumen may be seen sometimes yellow, sometimes red or pink, or covered with air bubbles. For the present it is enough to state, that these appearances result from the decomposition of the uric acid by the nitric acid, which deepens the colour of the urine, or of the urea, or any substances, as above, which effervesce on the addition of this reagent; or, lastly, the yellow colour may arise from there being nothing present to prevent the nitric acid producing this, its ordinary effect, upon animal substances.

Medical Gazette, Jan. 9, 1846, *p.* 73.

68.—*How to ascertain the Quantity of Urea in the Urine.*—By G. Owen Rees, M.D., F.R.S., &c.—[Dr. Rees recommends the following method of analysis for determining the quantity of urea in the urine:]

Evaporate urine to the consistence of a strong syrup, and then add pure concentrated nitric acid, until the whole mass becomes more or less solid. The crystalline matter which is now produced consists of nitrate of urea. This must be washed from adherent impurities by ice-cold water, and then pressed between folds of bibulous paper to dry. These crystals are now to be dissolved in lukewarm distilled water, and neutralised with carbonate of barytes. This mixture is to be evaporated to dryness, and alcohol boiled on the dried mass. In this way the urea may be extracted from the barytic salt. It may be obtained in colourless crystals, by digesting the alcoholic solution with animal charcoal, then filtering, and allowing the urea to crystallize by spontaneous evaporation. The chemical properties of urea are as follows:—

When heated on platinum foil it fuses; and if the heat be urged is decomposed, yielding fumes of carbonate of ammonia.

It is very soluble in cold water, but more so in warm. It gives out a great degree of cold when dissolved in any considerable quantity.

The concentrated solution in water will bear a heat of 212°, without decomposition; but in dilute solution it quickly decomposes at that temperature.

Alcohol of specific gravity 0·816 dissolves a fifth of its weight of urea at 60° Fahrenheit; when boiling it dissolves nearly its own weight.

It is slightly soluble in ether. The caustic alkalies decompose urea into carbonate of ammonia.

The nitric and oxalic acids combine with urea, forming salts more or less insoluble, The crystallisation with nitric acid forms one of its best distinctive characters.

Urea possesses neither an acid nor alkaline reaction; its crystalline form is that of a four-sided prism, exceedingly delicate, and silky in texture.

Medico-Chirurgical Review, Jan., 1846, *p.* 155.

69.—*On Deposits of Uric Acid, and its Combinations.*—By Robt. Dick, M.D.—A small quantity of uric acid forms a constituent of urine. The proportion is about 0.398 in the 1000 parts, or supposing the urine voided in 24 hours to be 46 ounces, 8.1 grains of uric acid are contained in that quantity. The uncombined lactic and uric acid, according to Berzelius, is owing to the acid reagency of urine. Dr. Prout, on the other hand, questions the fact of uric acid existing uncombined in normal urine, and assigns for this view reasons which appear plausible. He is of opinion that the uric acid exists in combination with ammonia, by which it is rendered greatly more soluble, while at the same time the acid retains, though thus combined, the property of reddening litmus paper. Though this acid is displaced very readily from its combinations, yet singularly enough, the urate and the super-phosphate of ammonia are found capable of existing in solution together, and to one or both of these, in Dr. Prout's opinion, is owing the acid reaction of urine. Dr. Bird, again, ascribes the acidity of urine to free phosphoric acid; and while we regard this view as less probable and much more hypothetical than that of Dr. Prout, these, as well as other differences of opinion, prove that the real constitution of the urine is far from being fully and precisely understood. We think it not improbable that future analyses may show that the acidity of the urine is owing, at different times, to various acids, or, perhaps, simultaneously to various acids, the uric, phosphoric, lactic, and sulphuric. Dr. Prout seems to have shown, as just observed, that uric acid does not exist free in normal urine; but it is still matter for inquiry whether free lactic acid, or some superlactate, does not contribute, with urate and super-phosphate of ammonia, to produce the acid reaction of healthy urine.

There seems reason to suspect that uric acid and its compounds are derived from chyle (particularly chyle furnished from an imperfect primary mal-assimilation), from the albumen of the blood, and, also, by destructive secondary assimilation from the *albuminous* textures. Urea and lactic acid are supposed to be principally derived from the gelatinous tissues. Uric acid and its compounds, in excess, are supposed more particularly to accompany and to indicate the gouty diathesis, as lactic acid does the rheumatic. In gout, the urine, previous to the attack, and often during the severity of it, deposits uric acid, the urates of ammonia and soda, with, occasionally, more or less of the phosphates of lime and of magnesia. The presence of the purpuric acid (as it is named by Dr. Prout, the murexan of Liebig), united with ammonia, gives a red or pinkish hue to the discharge.

While, during the gouty paroxysm, the salts named are escaping by the kidney, it may happen that the peculiar deposits of arthritic inflammation take place in the cartilaginous and tendinous tissues. These deposits consist chiefly of urate of soda, with occasionally small and variable quantities of the phosphate and carbonate of lime, and with the urates of potash and ammonia. They generally take place in the cartilages and ligaments, and in the arcolar tissue around joints and exterior to the synovial membrane. These form what are called the chalk stones of gout. When the depositions are in considerable masses, they are incapable of absorption, or, rather, solution: but in earlier and milder gouty attacks, deposits unquestionably take place, which, re-dissolved in the œdema of the accompanying or consequent inflammation, and thus absorbed into the circulation, leave the parts nearly or altogether as perfect as before.

The uric acid deposits depend, probably, on a variety of circumstances. They are witnessed in fevers and inflammations, doubtless, partly owing to the interruption of cutaneous transpiration, which so notably characterizes these states, during which the kidneys supplement, in some degree, the suspended elimination of uric acid by the skin. They may be said to be, in some measure, pathognomonic of what may be termed *nitrogenical diathesis*, that condition, namely, in which more nitrogenitic food having been used and assimilated than the system requires, the blood is preternaturally loaded with albumen and fibrin. In such circumstances the circulation disburdens itself of the unappropriated superfluity, through the kidney, in the form of uric acid, or some one or more of its combinations. If the redundant nitrogenized principles do not escape by the kidney, they take either the still more unfortunate channel of arthritic deposit around the joints, or else give rise to the severest and most intractable forms of biliary and dyspeptic disease and remarkable derangements of the gastro-enteritic secretions. In other cases, they induce obstinate and extensive chronic affections of the skin, either of a phlegmonous tubercular character, or of spreading abscesses, discharging a mixture of blood, sanies, and pus. Such cases have repeatedly come under my notice.

In an individual disposed to uric acid deposits, a large meal of animal food, or even of fine wheaten bread (in consequence of the azote contained in it) is apt to produce them; while a *moderate* employment of these articles of diet, or the use principally of farinaceous aliment, prevents the inconvenience.

Medical Gazette, Nov. 28, 1845, *p.* 1338.

70.—*On Siliceous Gravel.*—By Robert Venables, M.B., &c.—[Some years ago, Dr. Venables published the history of a case in which he found a siliceous deposit in the urine; about the same time Dr. Yelloly, who was making an analysis of the calculi, in the Norwich Collection, found the same substance forming the nucleus of an oxalate of lime calculus. Drs. Venables and Yelloly are the only observers we remember in England, who have mentioned *silex* as a urinary deposit. The following is the method of analysis adopted by Dr. V. to ascertain its nature:]

I made a slight impression upon a glass slide; it resisted the heat of the blow-pipe, undergoing no change whatever; but when a very small proportion of soda was added, and heat applied, it fused, forming a sort of semi-opaque permanent bead. Upon increasing the quantity of alkali, as by the addition of some carbonate of potass, and heating, it fused into a mass which was deliquescent, and dissolved in water. From this solution, hydrochloric acid threw down a gelatinous-looking mass of silica, the bulk of which was increased by evaporating to dryness; and I afterwards removed the chlorides of potassium and sodium by washing with warm distilled water. There remained two or three minute granules, of a whitish appearance, which, when contrasted under the microscope with granules of silica, prepared from flint-glass by Faraday's process, so closely resembled these as not to be distinguished. Hence there can be no question that the silex, in this case, as in Dr. Yelloly's, must have been of urinary origin.

In Fourcroy and Vauquelin's case, the silex was, as in Dr. Yelloly's, blended with oxalate of lime. In the instance just noticed, the earthy salts seemed the more predominant; but upon this I must observe, that the quantity spared to me for examination was so very minute, that it might be looked upon as a *microscopical* specimen, rather than one intended for chemical analysis.

It would be interesting to know what are the peculiar circumstances which give rise to the appearance of crystallized silex in the urine. The properties of the urine, in one instance at least, have been detailed by me in the Institution Journal, for the quarter ending December, 1829. The urine is the outlet by which noxious and useless principles, more especially if soluble, are ejected from the system. Silex may be found in many of the articles which form a principal part of our food, and hence it may be understood how Berzelius's analysis detected silex as a natural urinary constituent.

With respect to the means by which nature effects the solution of silex, there is but little upon which to form an opinion. The

culms of many vegetables are covered by a glaze of silex; and if the vegetable can take up silex, we may readily imagine that the animal economy can dissolve and eject it from the system.

Silex, as a hydrate, is slightly soluble; and moreover, when recently precipitated, dissolves most readily in the caustic alkalies. The concluding observations of Dr. Yelloly upon this subject, merit attention:—"The precise modes in which silex is capable of being held in solution, have not all of them been distinctly ascertained; but this fact bears a considerable analogy to the deposition of regular crystals of rock crystal, from solutions of silex in fluoric acids or in alkalies, after such solutions have been put aside for a considerable time."

Medical Gazette, April 3, 1846, *p.* 590.

71.—*Case of Chylous Urine successfully Treated with the Bark of Rhizophora Racemosa, or Mangrove.*—By G. R. Bonyun, Esq., M.D., &c., George Town, British Guiana.—[The mangrove plant grows on the sea-coast, the salt water canals, and the rivers as far as the tide extends. There are several species, as the rhizophora mangel, and rhizophora candel. The bark of the rhizophora racemosa has been long used by the negroes in the treatment of inordinate discharges of urine. The disease under notice is very common in the West Indies, and is very difficult to treat; it appears to be a modification of diabetes mellitus. The patient was a creole of Demerara, thirty-one years of age. It was on the 8th of May that he observed his urine was turbid and increased in quantity; he was ordered the tincture of iron, and in a month's time, the urine was decreased in quantity, white, and coagulated immediately after being passed; he was costive, very weak, little or no appetite, skin dry; was ordered bals. copaib, liq. potass., turpentine, but without any relief. He underwent different kinds of treatment, and ten months after the attack, was sent into the country; had no medicinal treatment, but was ordered to abstain from strong drink. After three weeks' absence, Dr. Bonyun reports his condition as follows:]

Urine, three pints daily, passed at four or five times, mostly in the evening, white, firmly coagulating, and separating, after remaining some hours, into a substance resembling curds and whey; no odour nor saccharine taste; the mucous discharge, which was hitherto only produced by exertion during the day, now came on an hour after rising in the morning, with great prostration of strength; tongue furred and dry; eyes suffused; lips parched; excessive languor and debility; slight perspiration occasionally; more inclination to drink, and appetite rather better; violent cramps during the night; greatly emaciated, but still able to move about a little. Took decoction of cashew bark, (*anacardium occidentale*), and thought himself slightly relieved for a time, but the symptoms returned, and continued with violence until the middle of March, the eleventh month, when, by the advice of an old

negress, he took decoction of rhizophora bark, in ounce doses, four times a day. After two days, urine appeared, immediately after being passed, like ill-prepared camphor mixture, and coagulated imperfectly; general health rather better. In five days, (the same treatment being continued), urine not coagulating, more limpid, with flowing particles of mucus, perspiration gradually increasing; appetite better and more natural; felt generally much improved. In seven days, felt so well that he discontinued medicine for two days, when symptoms began to return, urine to coagulate, &c. Medicine was resumed in increased quantity, and continued for several days, until all the symptoms had entirely disappeared, and the patient was restored to perfect health. After remaining in good health for some time, Mr. K——— was again attacked, and had again recourse to the mangrove bark, from which he experienced immediate relief, but being obliged to visit the town, and not having a sufficient supply, the disease increased upon him considerably, but was arrested as soon as he procured the medicine.

Within the last few months, this gentleman, in whom there appears to be a strong tendency to this peculiar disease, has had another attack in a modified form, the urine being similar to fresh milk in odour, taste, and appearance, and separating by application of wine into curds and whey. The use of the bark restored him immediately. It may be observed, that although he has had two slight returns of the disease, it has never been able to make head so as to affect his general health to any extent, or diminish his power of undergoing fatigue.

The very great benefit derived from the use of this bark induced me to try it in a case of increased flow of urine, occurring particularly during the night, with languor, indisposition to work, loss of appetite, &c., which I had under my care for some time, without being able to effect any amelioration. A wine-glassful four times a-day for three days entirely checked the inordinate flow of urine, and restored the patient to health.

I have used this medicine with several other patients, and I have reason to think with benefit; but the cases have not come sufficiently under my notice to enable me to give a proper account of them. If the mangrove bark is proved to have a specific effect upon the assimilating functions, to a derangement of which I think it most probable these peculiar abnormal excretions owe their cause, it will prove to be a valuable medicine, and is, therefore, well worthy of being properly tested in the hospitals of Europe.

Lancet, Jan. 24, 1846, *p.* 95.

TOXICOLOGY.

72.—ON PURIFIED ANIMAL CHARCOAL AS AN ANTIDOTE TO ALL VEGETABLE AND SOME MINERAL POISONS.

By A. B. Garrod, M.D., London.

[There are no poisons, except those belonging to the mineral kingdom, to which a direct antidote is known. For the large class of vegetable poisons, Dr. Garrod proposes purified *animal charcoal* as an antidote, and he has made numerous experiments with this substance, which show that it is applicable as an antidote to this class. He observes:]

Soluble albumen (derived from eggs, &c.,) has been found to act as an antidote to the bi-chloride of mercury or corrosive sublimate, because this substance forms an insoluble compound with the bi-chloride, which is inert. Again,—the soluble salts of lead (as the sugar of lead, &c.,) are precipitated by the sulphates, as Epsom or Glauber's salts, alum, &c., and an insoluble sulphate of lead is formed, which exerts no injurious action on the body. Common salt will prevent the poisonous action of lunar caustic, or nitrate of silver, from its power of decomposing this substance, and forming an insoluble and inert chloride of silver. Lime, or its carbonate, will also form an insoluble and inert oxalate, when brought into contact with oxalic acid; finally, we have the acids and alkalies acting as direct antidotes to each other.

The poisons we have just considered are but few in number, when compared with the numerous class for which such an antidote has not hitherto been known. This remark applies to substances frequently taken intentionally or by accident, such as opium, and its active principles (morphia, &c.) nux vomica, (strychnia and brucia), and the numerous class of plants belonging to the order solaneæ, as henbane, the deadly night shade, the bitter-sweet, thorn apple, and tobacco; also hemlock, bitter almonds, and prussic acid, the aconites, &c. &c., and, in fact, to all vegetable poisons; to animal, also, as cantharides, &c. It is to such poisons that the antidote I am about to propose is peculiarly adapted, and the great advantage it possesses, arises from its perfectly innoxious properperties, and therefore may be taken in any quantities; also, from its being applicable to poisons so numerous and diversified in character; this substance is purified animal charcoal, the *carbo animalis purificatus* of the *London Pharmacopœia*.

Before trying any experiments on animals, I made a solution of hydrochloric acid, of the strength of the gastric juice, and kept it at the temperature of the stomach (100° Fahr.), and from this solution I found that animal charcoal had the power of precipitating strychnia, morphia, and the various matters above mentioned; hence I came to the conclusion, that, if the charcoal removed these principles from a solution imitating the gastric juice, the action of the stomach could not again separate the poison from the charcoal.

To prove this theory, I then made some experiments on animals: I first used strychnia as the poisonous agent, on account of its acting with certainty, and producing on all animals such definite symptoms. Two guinea-pigs were taken (about the same size); to the first, half a grain of the poison was administered, dissolved in water, by means of a few drops of hydrochloric acid; in about five minutes the animal became tetanic, and soon died from asphyxia, induced by spasm of the respiratory muscles.

To the second animal was given the same quantity of strychnia, with the addition of animal charcoal to the solution until the bitterness was removed,—not the slightest tetanic symptom appeared.

The last experiment was repeated several times on the animal, and always with the same result. Strychnia was then given to several rabbits, and it was found that from one-fourth to one-eighth gr. was sufficient to cause death; but when from one-fourth gr. to three-fourth gr. was administered with the animal charcoal, no injurious effects were produced, even when the animals took six times the amount of poison sufficient to destroy them.

Before detailing any further experiments, I may mention that a *certain amount* of animalcharcoal is repuired; and, should less than this quantity be given, the poison will act by its excess above the antidote: for example, if an animal takes one grain of strychnia, and only sufficient of the antidote to neutralize the effect of three-quarters of a grain, tetanic convulsions, and even death, may be produced, according to the strength of the animal.

Opium was then used as the poison, in doses of ten grains, it usually destroyed the life of the dog,—in smaller doses, it produced great stupor. Animal charcoal was found to act as a perfect antidote either when given with the poison, or before the narcotic symptoms appeared.

When experimentalizing with laudanum, we must take into consideration the effect which the alcohol contained in it may produce; for I found that a very small quantity of proof spirit (less than two drachms) was sufficient to destroy a young dog, and the charcoal would not prevent the effect, as it would absorb only a small quantity of it; so that the tincture of opium, when given with animal charcoal, will often cause the death of a young animal: but this would not be the case in man. In my experiments with opium, I have generally used a slightly acidulated watery solution. Morphia, and the salts of that alkaloid, when given with the antidote, were also found to be perfectly inert.

Ipecacuanha was then tried, and in ten grain doses, was found, in about fifteen or twenty minutes, to cause violent vomiting and retching, which continued for about two hours; but when about half an ounce of the animal charcoal was given with this substance, or soon after, the emetic effect was entirely prevented. One dog, however, after taking the ipecacuanha and charcoal, brought up some matter from the stomach, but had no retching. The cause of this was easily explained; for the animal had taken some corro-

sive sublimate the day before, and after death, the stomach was found inflamed: so the mere presence of the charcoal would have caused the expulsion of the contents.

Three grains of good elaterium were then given to a middle-sized dog, and half an ounce of animal charcoal; no effect was produced.

Two drachms of Morson's tincture of aconite (which causes tingling and numbness, when applied to any part) were given to a dog with about half an ounce of animal charcoal; the dog experienced no ill effect.

Full half a grain of Morson's "aconitina" was given to a middle-sized dog; it soon caused violent vomiting and retching, which continued for some time; then, perfect loss of sensation of the whole surface came on, the heart's action became slow and feeble, and death took place. Even one-fiftieth part of a grain was found sufficient to produce the same symptoms, and cause death.

Three-quarters of a grain were then given to a dog, with about half an ounce of the charcoal, and not the slightest effect was produced, although enough was taken to destroy at least forty dogs. When aconite root, or the leaves, are given, the antidote may be administered some time after the poison.

Prussic acid was also tried: thirty minims of Scheele's strength, or that containing five per cent. of real acid, were given to a dog, this destroyed the animal; but the same quantity, with about an ounce of the charcoal, did not produce any effect. The results were found to be the same when the other vegetable poisons were used,—as belladonna, and its active principle, atropia; datura strammonium; tobacco, digitalis; delphinium staphisagria, and delphinia; veratrum album and veratria; hemlock, &c. &c. It would be useless to detail all those experiments, as there is every reason to suppose, that animal charcoal would neutralize the poisonous properties of *all* vegetable bodies, for it seems to act chemically in the same way upon all.

The effects of cantharides were also prevented by the administration of animal charcoal: for when sixteen of the flies were given to a dog, and the antidote soon after, they produced no ill effects.

Mineral Poisons.—I afterwards tried the antidotal power of animal charcoal on a few mineral poisons. Four grains of arsenious acid, with about two ounces of the charcoal were given to a dog; he experienced no ill effect, not even vomiting. After a day or two carbonaceous stools were passed, and these, when boiled with a strong solution of hydrochloric acid, yielded arsenious acid, which could be detected by putting bright slips of copper into the boiling solution; but the better way to detect the arsenic, would be to heat the carbonaceous matter to redness, and collect the volatilized arsenic.

To another dog five grains of arsenious acid were given, with two ounces and a half of animal charcoal; he did not appear to be affected by it, having neither vomiting or diarrhœa. So I think

we may conclude, that animal charcoal is equal to any known antidote for arsenic. It has greater power of removing arsenic from its solution, than the hydrated sesqui-oxide of iron.

Four grains of corrosive sublimate, with about an ounce of animal charcoal were then administered to a dog; he soon suffered from violent vomiting and purging, and died during the night. From this we must conclude, either that the charcoal is not an antidote to corrosive sublimate, or that it was not given in sufficient quantity to neutralize the poisonous effects of the whole of the mercurial salt, and a very small quantity of this poison is sufficient to kill a dog.

To another dog one grain and a quarter of the poison was given, and soon after, an ounce of the charcoal; he had slight vomiting, but recovered. Three grains were afterwards given, with an ounce and a half of animal charcoal; in about a quarter of an hour the animal felt great uneasiness, and had a viscid secretion from the mouth—he, however, became relieved in a few hours, and had neither vomiting nor purging.

There is little doubt but that the charcoal is, to a certain degree, an antidote to this poison, but not much to be depended on; white of eggs, or albumen, in any other form, would be much superior, and would not be required in such large quantities. Animal charcoal will also act as an antidote to the copper and lead salts, and to various other metallic preparations; but when an antidote is known to any of these, as to the lead salts, which is capable of forming insoluble and inert compounds with them, they would be decidedly preferable to animal charcoal.

From the experiments detailed above, I think we may conclude,—

1st. That animal charcoal has the power of combining in the stomach with the poisonous principles of animal and vegetable substances, and that the compounds thus produced are innoxious; therefore, when given before these poisons have become absorbed, it will act as an antidote.

2ndly. That animal charcoal will absorb some mineral substances, and render them inert; but so large a quantity of the charcoal is required, that it is not so well adapted for many poisons of this class as their own special antidotes; the effects of arsenic, however, appear better combated by this than by any other antidote.

3rdly. That a certain *amount* of animal charcoal is required, about half an ounce to each grain of morphia, strychnia, or any other alkaloid,—but, of course, much less for the substances from which they are obtained,—as opium, nux vomica, &c.; a scruple of nux vomica not requiring more than half an ounce of charcoal.

4thly. That the antidote itself exerts no injurious action on the body.

Kind of Charcoal to be Used.—The charcoal used for most of these experiments, was the purified animal charcoal prepared according to the directions of the *London Pharmacopœia*, viz., by digesting bone or ivory-black (used by sugar refiners) in dilute hydrochloric acid, washing and drying it; it is improved by afterwards heating it to redness in a covered crucible.

Ivory black has a certain amount of antidotal power, but would be required in very much larger quantities, containing above 90 per cent. of earthy matter.

Vegetable charcoal possesses but a small antidotal power, compared with animal charcoal.

Lamp-black is totally devoid of the property.

Mode of administering the antidote in cases of poisoning.—I should recommend the charcoal to be rubbed in luke-warm water, so as to form a fluid of slight consistency, and thus it may be given in quantities of from one to four ounces, according to the nature and amount of poison that has been taken. Emetics may likewise be given at the same time, but ipecacuanha must not be used for that purpose, as the charcoal would entirely prevent its action. Sulphate of zinc, in scruple or half drachm doses, would be the best emetic; or the stomach pump may be employed, and after these, more charcoal administered.

As animal charcoal possesses this power of absorbing all principles, may it not prove a useful agent in preventing the injurious effects of animal poisons, such as rabies, syphilis, poison of serpents, &c., if applied in the form of a poultice to the parts which have come into contact with the poisons?

Transactions of the Med. Society of London, New Series, Vol. 1, p. 195.

73.—*Case of Poisoning by Hydrocyanic Acid.—Recovery.*—By William Gray, M.B., Cantab, &c.—[The following case of poisoning by prussic acid, is a valuable addition to those which have lately been recorded. The length of time which elapsed after taking the poison and the commencement of its action, consciousness and command over the voluntary muscles remaining, is extremely important in a medico-legal point of view. The patient was the son of a medical man, of temperate and studious habits, he had taken rather more wine that day to dinner than was his custom, and at night he was tempted to commit suicide—accordingly he went into his father's surgery, and took out a stoppered bottle, containing from one to two drachms of prussic acid of the pharmacopœial strength; he went to bed, and soon after, his friends were roused by hearing a heavy body fall on the floor of his room.]

His father was almost immediately on the spot, and seeing the bottle on the drawers, dashed several buckets of water over the face of his son. This roused him. He was then taken into an adjoining room, and put to bed, the treatment consisting in holding ammonia to the nostrils, and applying heat to the spine and feet. An injection was also given, containing tincture of assafœtida.

When I reached the house I found him in the following state, in which he had continued without alteration for three hours:—He lay on his back, drawing in his breath with great effort, each inspiration being accomplished by a loud gasping sound, and a distinct mucous râle. The pulse was upwards of 140 in the minute, and the respiration 36. The surface of the body was very cold; the

countenance was of a dull leaden hue; the lips blue; the pupil extremely dilated, and the jaws rigid, in which state they had remained for the whole period, so that it had been impossible to administer any antidote. The treatment from this time forward consisted in holding ammonia under the nostrils, assiduous frictions with the flesh-brush, and the application of heat to the surface by means of flannels warmed at the fire, and constantly renewed. At the expiration of about five hours there was some effort to vomit, encouraged by tickling the throat, and some bloody mucus was wiped from the mouth. Soon afterwards he could be made to swallow, when some warm brandy and water and some strong coffee were given him. At this time too, he could be made to answer in monosyllables, and could raise himself on his elbows. He was also perfectly sensible, but looked bewildered. At the end of about six hours he was sufficiently recovered to answer questions, move himself about, and call for lemonade, which he drank freely.

I saw him about fourteen hours after taking the poison, and found him quite well, though weak. He gave the following distinct account of the attempt of the night before:—He was suddenly tempted, as he said, by the devil, to take prussid acid, under a confused idea that it would not hurt him. He swallowed, according to his own account, a mouthful of the acid from the bottle in bed. He then got out of bed, walked round the foot of it to a chest of drawers standing within a few yards of his bed-side, placed the stopper so firmly in the bottle that it could not be removed, and then walked back to bed, intending to get in again. He reached the side of his bed, sat down upon it, and then lost all consciousness. During all this time he said that he had no giddiness, and no unpleasant sensation of any kind, no more than if he had taken so much water. He also assured me, and his manner made me quite confident that he spoke the truth, that the idea of suicide had never before entered his head. The father of the lad has since informed me that the fæces, and, as he believes, the urine too, were expelled as the first effect of the poison.

Medical Times, Nov. 22, 1845, *p.* 169.

74.—*New Test for Prussic Acid.*—In the last number of the *Dublin Hospital Gazette*, Dr. Austin, Jun. has suggested the following process as a means of identifying cyanide of silver when this compound is in so small quantity as to render it difficult to procure from it cyanogen by heat. Half a grain of cyanide is to be fused in an iron or platinum capsule, with a small quantity of oxide of iron and carbonate of potash. Dissolve the fused residue in half an ounce of distilled water, filter, and divide the filtered liquor into two portions. A drop or two of muriatic acid is to be added to each portion, so as to render the liquid slightly acid, and then add to one a solution of sulphate of copper, and to the other a solution of a persalt of iron. In the former case, the ferrocyanate of copper, and in the latter, the ferrocyanate of the peroxide of iron (Prussian blue), are produced. These results furnish clear

evidence of cyanogen in the precipitate, when the attempt to procure a rose-red flame by burning the gas, may entirely fail.—*Dublin Hospital Gazette*, April 1, 1846.

[This is an ingenious and a very effectual method of identifying the cyanide of silver. We find that no metallic capsule is required; a small glass tube, one sixth of an inch in the bore, answers effectually. Fine iron filings may be substituted for oxide of iron, and a small piece of potassium for carbonate of potash. The mixture is readily fused: when cold, the end of the glass tube, containing the fused matter, may be broken off, and the whole boiled in a small quantity of water. The solution may be easily proved to contain ferrocyanide of potassium by the addition of an extremely diluted solution of sulphate of copper (otherwise the red colour is concealed) or a solution of a persalt of iron. There is, however, one circumstance not noticed in Dr. Austin's paper. The previous addition of muriatic acid to the solution in order to neutralise the alkali, causes the production of some Prussian blue, owing to the acid forming an iron salt with some surplus iron or oxide of iron used in the experiment. This alone is clear evidence of the presence of cyanogen. In relying upon this mode of testing, it must be remembered that any kind of nitrogenous (oaganic) matter mixed with iron and alkali will produce when heated ferrocyanide of potassium; but it is only from a *metallic cyanide* that cyanogen can be procured in a state adapted for combustion. From our own experiments, we doubt whether this process of identification is more delicate than that commonly pursued, of applying heat to the cyanide of silver, and burning the gas.—Editor of the *Medical Gazette*.]

Medical Gazette, April 17, 1846, *p.* 706.

75.—*On the Vitiation of Air, by Carbonic Acid Gas.*—By John Snow, M.D., London.—[In 1839, Dr. Snow related to the Westminster Medical Society, a number of experiments which he had performed, showing the effects of air vitiated by carbonic acid gas, upon animals; which were briefly reported in one or two of the periodicals of the time. The deductions he arrives at are highly important. He observes]

There are on record a great number of cases of gradual or slow asphyxia from atmospheric air contaminated with carbonic acid gas, but the circumstances under which these accidents occur are always such as to preclude the possibility of analysing the air producing them. The greatest difference of opinion has existed amongst authors, not only with respect to the amount of deterioration which is fatal or dangerous, but also as to whether carbonic acid is an active poison, or is merely injurious by displacing the atmospheric air; and although the experiments of Collard de Martigny show, in my opinion, the active nature of carbonic acid, they do not show the quantity necessary to produce injury or death; and I know of no experiments on animals, except those I

am about to relate, which are calculated to point out the condition of an atmosphere which may or may not be fatal to persons breathing it.

When there is more carbonic acid in the air than the fraction naturally present, there will always be a diminution of the due proportion of oxygen; but this diminution will vary very much with the manner in which the carbonic acid has been produced: if it has been given off from a fermenting vat, or separated from lime or any body with which it was in combination, it becomes added to the air, mixing with it and displacing the nitrogen and oxygen alike. In this case the diminution of the oxygen is equal to twenty-one hundredths of the carbonic acid gas present, or about one-fifth. But if the carbonic acid is the result of the breathing of a number of persons in a limited portion of air, or of the combustion of charcoal or other matter in it, then the carbonic acid gas being formed by union of carbon with the oxygen of the air, the diminution of the oxygen in a given bulk will be always equal to, and in many cases somewhat greater than the amount of carbonic acid present. As an illustration of the above difference in the constitution of the air, I may here remark that a small wax taper is instantly extinguished in air which has been contaminated by respiration till it contains four per cent. of carbonic acid, whereas twenty parts carbonic acid, or twenty-five parts nitrogen, require to be added to one hundred parts of common air, before it will extinguish the flame.

In order to investigate this subject properly, I sought to determine separately the effects of carbonic acid and of a diminished amount of oxygen; and the quantity of air used, in proportion to the size of the animals experimented on, was so great that the result could not be vitiated by the products of their respiration during the experiments.

[From Dr. Snow's experiments we learn]

That five or six per cent. of carbonic acid cannot exist in the air without danger to life, and that less than half this amount will soon be fatal, when it is formed at the expense of the oxygen of the air, as it is in most cases of accident or suicide.

Whilst these experiments clearly establish the fatal effects of carbonic acid, they disprove some of the arguments from which this gas has hitherto been concluded to be poisonous. It has been said that the illness following exposure to its effects, in cases where the patient was discovered before death, showed its poisonous nature; but in the sixth experiment we have illness and subsequent death after removal from an atmosphere deteriorated by removal of part of its oxygen, whilst no carbonic acid was present; and the chance of recovery after these experiments seemed to depend on the extent and duration of the previous suffering, rather than on the presence or absence of carbonic acid.

It has been argued, that the blood being found florid in the body, was a proof that there was sufficient oxygen in the air, and that, hence, death resulted solely from the carbonic acid. But,

in the fifth experiment, the blood in the lungs was florid, when none of this gas was present, and death arose from an insufficiency of oxygen—an insufficiency to maintain life, yet enough to redden the blood.

Carbonic acid gas caused deep and laborious breathing, but in what way it was destructive to life, these experiments do not enable us to state. Its injurious effects seem to depend rather on its physical properties, viz., its density and solubility in the blood, than on any strictly poisonous qualities; and this view is supported by Nysten's experiments of injecting it into the blood-vessels. He sums up the result of his experiments as follows: "Le gas acide carbonique injecté dans le systéme veineux en quantité considérable, mais avec les précautions nécessaires pour ne pas occasioner la distension du cœur pulmonaire, ne donne lieu à d'autre phénomène consecutif notable qu'une foiblesse musculaire qui cesse au bout de quelques jours."

The experiment of Collard de Martigny, in which he was immersed in the gas without breathing it, might seem opposed to this view; but it is to be observed, that he breathed through a long tube, which process, by obliging him to respire part of the same air over and over again, would sufficiently account for all the symptoms he experienced.

The appearances after death in the experiments recorded in this paper, were somewhat various, and seemed to depend, rather on the slowness or quickness of dying, than on the constitution of the air causing death. There was no appreciable congestion or other morbid appearance in the brains of those animals which died. Apoplexy has occasionally occurred to human beings under similar circumstances, but the brain of man is a much more complex organ than that of the bird and rodent. Many of these birds sweat profusely during the experiments, breathing laboriously, and placed, as they were, in an atmosphere saturated with moisture. Naturalists tell us that birds do not perspire; the fact, however, is otherwise; but, under natural circumstances, the perspiration passes off insensibly in the form of vapour, on account of the high temperature of their bodies.

These experiments agree with some points which have been observed in accidents to human beings. For instance, a contaminated atmosphere has been known to prove fatal, though it produced no inconvenience at first. Now, in the majority of these experiments, the animals were apparently not affected till after a longer or shorter time. It has been observed, that air contaminated with carbonic acid may be dangerous, although a candle will continue to burn in it, and such was the state of the air in the fourteenth and fifteenth experiments.

The amount of oxygen cannot be reduced by any notable amount without danger. I mean the amount in proportion to the nitrogen; for the amount in a given space may be greatly reduced, provided the nitrogen be reduced *pari passu*, since, on high mountains, persons suffer only a little inconvenience, when the quantity of

oxygen in a given space is reduced below what would be quickly fatal, and what would admit of the combustion of no ordinary materials, if the full amount of nitrogen were present.

Edinburgh Medical and Surgical Journal, Jan. 1846, *p.* 49.

76.—*Asphyxia caused by Carbonic Acid Gas.*—By M. M. Bayard and Tardieu.—The particular circumstances under which the following cases of asphyxia in two persons, at one and the same time, occurred, render it one of peculiar interest. Cases of accidental asphyxia, the result of vapour disengaged from carbonised beams of wood, are somewhat rare. M. Devergie has cited a few cases in which this accident occurred from the vicious construction of stoves, in which their pipes were placed so near the beams as to occasion the gradual carbonisation of the latter. Ollivier, (D'Angers) has also related a remarkable case of asphyxia in two persons at the same time, from the vapour of coke.

[A fire had been lighted in a room on the same floor as that in which the master and mistress of the house (Dricton) slept; it appears that in the construction of the house, some beams which supported the floor, passed into the flue, which took fire, and from their being surrounded with plaister, &c. slow combustion was the consequence. M. and Madam Dricton retired to bed in the room adjoining the one in which there had been a fire, but which was put out, and in the morning were found dead in bed. On the previous night smoke was perceived in the room, and supposing it to have come down the chimney, M. Dricton closed closed the fire place in his room, so that there was no way for the smoke to escape: it was this that on the previous night kept the room clear.]

Monthly Journal of Medical Science, Jan, 1846, *p.* 50.

77.—*Poisoning by Aconite.*—By Geo. Sayle, Esq., King's Lynn. [Mr. Sayle relates the case of a man who died in consequence of taking decoction of aconite. He saw him an hour after he had taken it, when he was quite insensible, pupils widely dilated, and pulse scarcely perceptible; he was foaming at the mouth, and throwing his arms about. A tea-cupful of neat brandy was administered, which, for a time, revived him, but while the contents of the stomach were being evacuated by means of the pump, he suddenly expired.]

The plant was the aconitum napellus, stalks and leaves quite fresh.

Of these, six were cut up and boiled in half a pint of beer down to a quarter, half of which he drank. Upon adding a solution of nitrate of silver, an abundant deposit followed, both in the decoction and the contents drawn from the stomach. The solution of the diacetate of lead produced the same results in larger quantity.

Post-mortem examination forty-eight hours after death. Abdomen—the liver, spleen, and kidneys distended with dark blood; veins generally congested; the stomach presented a slight blush

near the cardiac extremity; the whole alimentary canal emptied of fæcal matter and distended with air; the valvulæ conniventes distinctly seen from without, owing to the congested state of the blood-vessels; pelvic viscera healthy. Remaining part of the body not examined.

Remarks.—The case in itself presents nothing remarkable; but as they are rarely met with, I think it behoves the medical man to publish these symptoms carefully for the information of others.

Dr. Fleming, in his prize dissertation, speaks of four *degrees* of operation in man, and finishes his remarks on the fourth degree with these words:—"When the action of the drug is carried to a fatal extent, the individual becomes entirely blind, deaf, and speechless. He either retains his consciousness to the last, or is affected with slight wandering delirium; the pupils are dilated; general muscular tremors, or even slight convulsions supervene; the pulse becomes imperceptible both at the wrist and heart; the temperature of the surface sinks still lower than before, and at length, after a few hurried gasps, death by *syncope* takes place." It will be seen that this case and Dr. Fleming's description admirably agree, and that death takes place by syncope is proved by all the organs examined being enormously distended with blood. The *quick* action of the stimulus was very remarkable, and I imagine if he had been seen earlier, and the same plan adopted, although the dose was very large, it would have been attended with success.

Northern Journal of Medicine, Dec., 1845, p. 438.

78.—*Poisoning with Strychnia.*—By James Watson, M.D., &c. —[A patient of Dr. Watson's, who was in the Glasgow Infirmary for the treatment of a disease of the scalp, took, by mistake, three pills, containing strychnia. She died in an hour's time. The particulars of this case Dr. Watson communicated to the *Monthly Journal*, for December, 1845, from which we extract the following:]

Agnes French, aged 13. *September* 27, 1845. Has been in this house since the 16th instant, for eczema capitis, which is now nearly well.

About half-past five, p.m., swallowed three strychnia pills, which belonged to a paralytic patient in the same ward. Each pill contained a quarter grain of strychnia. She had been occasionally in the habit of taking medicines belonging to other patients. Twenty minutes after taking the pills, she said she felt a strange sensation in her head, and became almost immediately convulsed. The clerk was called, and visited her without loss of time. The following was her state. The arms were found extended and rigid, as also were all the muscles of her body, which was bent backwards at a considerable curve. Pupils were natural. Pulse was obscured from the rigidity of the muscles, but impulse of the heart was

strong. Face was much flushed and lips livid. Breathing rapid and difficult, but larynx quite free,—spasms of diaphragm very marked. Every few minutes she had a fit of general convulsions. The mind was quite entire, and great fear and anxiety for relief were expressed.

The cause at first being unknown, six ounces of blood were abstracted from the temporal artery. Cold lotions were applied to the head, and sinapisms to the extremities. Ten minutes after the symptoms began, the owner of the pills told the cause, when a scruple of zinc was immediately given, and large draughts of warm water, which were eagerly swallowed by the patient. No vomiting, however, was induced for about a quarter of an hour, although the fauces were tickled with a feather; and when the emetic operated, it acted very sparingly. All this time the opisthotonos and universal muscular twitchings had continued most violent; but now, during one of the ineffectual attempts to vomit, the rigidity of the muscles suddenly relaxed, and the spasmodic contractions ceased. The heart's impulse, previously strong, could not now be felt, and respiration was for the time extinct. Her face, which, from the commencement of the attack, had continued deeply flushed, became gradually pale, from above downwards; her lips remaining livid. She was laid down, and seemed to recover slightly; her chest heaved slowly, and her heart beat feebly, and at long intervals. The flush also somewhat returned to the face, but with the exception of a few twitches, she had no recurrence of the spasms. The pupils were now dilated—the eyes fixed and turned upwards. The stomach-pump was suggested, and immediately applied, but without any good effect. In a short time the respiration again ceased, and the heart could no longer be felt. The flush, which had been but slight, again descended and disappeared on the neck. Artificial respiration, and galvanism to the phrenic nerve, were now tried in vain. The patient was dead. Death took place at three quarters past six, p.m., little more than an hour after the poison had been swallowed, and in about three quarters of an hour after it had produced its physiological effect.

Autopsy forty-four hours after death.—Face placid, abdomen tympanitic, much lividity of depending parts. Post-mortem rigidity of body in general moderate, but fingers and thumbs very livid, half-flexed, firm, and somewhat elastic. Integuments of scalp bled freely on being cut. Brain and its membranes quite natural, excepting turgescence of velum interpositum and choroid plexus. Spinal cord healthy,—its investing membranes rather vascular. Lungs much congested with venous blood. Muscles of heart quite stiff. The right ventricle was flattened into a sharp edge, and was quite empty. The left ventricle was also collapsed and empty. The auricles were in a similar condition. The stomach contained a half-digested meal. Its mucous lining was pale and natural. Other viscera normal.

Monthly Journal of Medical Science, Dec. 1845, *p.* 908.

79.—*Case of Poisoning by Belladonna.*—By Dr. Gray, of New York.—[The following case is one of great interest, inasmuch as the symptoms are described with great minuteness, and also from the fact of Dr. Gray being the person who took the belladonna, and noted his own sensations during the action of the narcotic. He says]

I had taken an unwarrantably large dose of the article in question, to quiet the pain of a severe neuralgic toothache; not finding any relief, I repeated it in the course of ten or fifteen minutes, swallowing in all some eight or ten grains. About an hour after the last dose had been taken, the medicine began to induce its specific symptoms in the following order:—First, vertigo, increasing to such an extent as to render it impossible to walk without staggering. The dizziness, which was at first transient, soon became continued, and very severe. Now came on the affection of the eyesight, every object growing dim, as though a cloud were between the eye and it. Sometimes objects appeared double, and with an undulating motion passed before the eye. I observed that by a strong effort of the will, a concentration of the nervous power, this paralysis of the retina might for a moment be combated; but only to return with greater severity when the mental effort had been succeeded by its corresponding relaxation. The appearances of the eye were much the same as those mentioned in the former case—viz., pupil immoveably dilated; eye prominent, dry, and exceedingly brilliant. The conjunctival vessels were fully injected. There was a total absence of lachrymation, and motion was attended with a sense of dryness and stiffness. The face was red and turgid, and the temperature and colour of the surface considerably augmented. Pulse full, and about 120 to 130. The feeling in the head was that of violent congestion, a full, tense, throbbing state of the cerebral vessels, identically the same sensation as would be produced by a ligature thrown about the neck, and impeding the return of the venous circulation. The peculiar state of the throat next excited attention. The tongue, mouth, and fauces were devoid of moisture, as if they had been composed of burnt shoe leather. The secretions of the glands of the mouth, and the saliva, were entirely suspended. A draught of water, instead of giving relief, seemed only to increase the unctuous, clammy state of the mucous membrane. About the bag of the pharynx this sensation was most distressing. It induced a constant attempt at deglutition, and finally excited suffocation, spasms of the fauces and glottis, renewed at every effort to swallow. A little saliva, white, and round like a ball of cotton, would now and then be evacuated.

The slight delirium that followed the action of the narcotic, was of a strange, yet not unpleasant kind. I wished to be in constant motion, and it certainly afforded me an infinite degree of satisfac-

tion to be able to walk up and down. The intellectual operations, at times, were very vivid. Thoughts came and went, and ludicrous and fantastric spectacles were always uppermost in my mind. I was conscious that my language and gesticulations were extravagant, yet I had neither power nor will to do otherwise than I did; and notwithstanding my bodily malaise, the mind was in a state of delightful exhilaration.

The treatment was very simple: cold douche to the head, and an emetic, soon destroyed the dominion of the poison.

In this case, as in the other, I found some difficulty in provoking the operation of an emetic, owing to the insensible condition of the stomach. After vomiting, the disposition to sleep became very urgent. Strong coffee, however, counteracted this tendency.

One other fact with reference to the effects produced by belladonna is worthy of note—viz., its tremendous diuretic power. I have observed that it does not seem to reach the kidneys, until it has been some time in the stomach, and has exerted its specific influence upon the brain. But its power over the secretion of urine seems to be very great. I am confident that I passed in the course of an hour three pints of urine, accompanied with a slight strangury at the neck of the bladder.

The nature, properties, and effects of atropa belladonna are so well known, that I need not enlarge this paper by alluding to the subject. As there appears to be no positive antidote to its poisonous effects, the treatment must be based upon general principles.

Reasoning from the effects it produces upon a healthy body, its indications in disease become evident. From its property of dilating the pupil, it becomes an indispensable in the treatment of iritis and incipient cataract. In many other affections of the eye, it is a remedy of essential importance. Its effects in painful ulcerations—in pertussis—in neuralgia, and in a host of nervous maladies, are universally recognised.

From its effects, as observed in my own case, I am induced to believe that it may become an important remedy in diseases, in the treatment of which at present it is but little used.—*New York Journal of Medicine.*

Dublin Medical Press, Dec. 24, 1845, *p.* 410.

80.—*Extraordinary Recovery after taking Essential Oil of Bitter Almonds.*—By Frederick Hetley, Esq., House Surgeon, Middlesex Hospital.—[The patient in this case was a respectable looking female, twenty-one years of age, who had attempted suicide by swallowing the essential oil of bitter almonds. On her admission into the hospital,]

The respirations were noticed to be slow and regular, like a person under the effects of a full dose of laudanum, bnt the pulse small, thready, and at least 130—140, and the pupils contracted to

an aperture of the size of a pin's head. She continued in this state for about three minutes, when the countenance suddenly assumed a pale livid hue, similar to that of an individual with advanced cardiac disease. An emetic was attempted to be administered, but all power of deglutition had ceased. The stomach-pump was then applied, and the breathing which, both before and during the whole operation remained slow, now became stertorous.

The contents of the stomach were first drawn off, consisting of about two ounces of dark brown fluid, emitting the powerful smell of oil of bitter almonds. The stomach was now four times washed out with water, and as each basinful was drawn off, the smell of the poison became fainter and fainter. Towards the termination of the operation, the stomach regained some tone, and occasional powerful efforts were made to vomit. During this period, the bladder and rectum acted involuntarily. Before the stomach-tube was removed, a solution of chlorine was injected, and the patient was then carried up to bed, still comatose, and the pupils unaltered. On visiting her in the ward in the course of a quarter of an hour, she appeared like a person in a deep sleep, and on feeling her pulse, which still remained 140, she suddenly roused, and, looking wildly about her, with a maniacal appearance, inquired where she was. The pupils now suddenly dilated to their fullest extent, and she was unable to see distinctly. She stated that she bought two pennyworth of oil of bitter almonds, which she swallowed in the street, then threw away the bottle, and almost immediately afterwards fell senseless on the pavement. She now complained of excessive burning heat in the regions of the larynx and pharynx; was hoarse; and talking, she said, distressed her; some pain and sensation of heat in the epigastrium, but no tenderness on pressure. The pulse gradually came down to 100. She expressed a feeling of general numbness in her legs and arms, without pain in them; but on pinching the extremities she cried out. The arms and hands were mottled with a livid hue, and colder than might have been expected from the time she had been between warm blankets. The solution of the chloride of soda, half an ounce, with compound spirit of ammonia, was now administered every three hours, and a sinapism was applied to the epigastrium. She evinced great disposition to sleep, but was easily roused, and on visiting her at four separate periods, within two hours, she was found each time in this light kind of sleep. During the night she got up and passed her water, and would have slept during the whole twelve hours she was in the hospital, had the nurse not disturbed her to give the medicine; moreover, we strictly charged the nurse not to suffer her to sleep for any lengthened period. In the morning, the friends came forward, desiring to remove her home, when she gladly and hastily dressed herself, and walked down stairs with them to a cab.

The following are points particularly worthy of notice in this unusual and interesting case:—The quantity of the poison taken was insufficient to cause instant death, as would have been the case with hydrocyanic acid, and yet the subsequent coma would doubtless have terminated fatally, if the timely use of the stomach-pump had not been resorted to. On her admission, the effects of the poison on the nervous system was gradually fading, as she could be roused, she talked incoherently, and answered questions, as before remarked; but a proof that the whole strength or power of the poison had exerted itself on the nervous system, may be deduced from the fact, that the spinal column and brain were primarily affected, producing involuntary action of the sphincters, loss of sensation in the extremities, and (through the medium of the phrenic nerve), the slow breathing of narcotism, whilst, on the other hand, the vascular system was only secondarily affected, producing the rapid and almost countless pulse. The lividity of countenance, which so suddenly attracted our notice, was doubtless from the delay of the circulation through the pulmonary system, and not from any primary or specific action of the poison upon the respiratory organs, so that this lividity may be explained on the same pathological grounds as that produced by obstructed mitral or bicuspid valves,—viz., a delay of blood from the right to the left side of the heart.

It appears from the above facts, that the chief action of the poison was spent on the ganglionic portion of the nervous system; if it were not so, how would the reader explain the unusual pathological fact, that the respirations were but twelve, whilst the heart was 140, knowing, as we do, that in health, as well as in disease, those two departments of the respiratory system are nearly accurately balanced? Moreover, as a proof of the correctness of this opinion, let us bear in mind how little the muscular system was involved during the perfect coma. It required six people to control her powerful exertions during the application of the stomach-pump, when the coma was most complete. This singular occurrence is never witnessed in coma from laudanum; in stupefaction from ardent spirits; or in apoplexy, &c.

I have been rather minute in my detail of the above interesting case, as it illustrates the peculiar action of a poison, which, from its rapid fatality, has seldom offered an opportunity of recording a complete train of symptoms; but, in this instance, it is particularly instructive to observe the distinct line of difference between the two parts of the nervous system involved.

Lancet, Dec. 6, 1845, *p.* 612.

81.—*Case of Poisoning by Opium, in which Electro-magnetism was employed.*—By J. J. Colahan, Esq.—[An infant of perfect conformation, had been given 25 drops of laudanum to procure sleep. This was at one o'clock, p.m.: at eight o'clock, Mr. Colahan

saw the child; the respiration was hurried, occasionally there was stridor, with other signs of acute bronchial irritation; the pulse rapid, but distinct; the physical symptoms, Mr. Colahan remarks, constituted a group exactly resembling laryngitis. An emetic was ordered; in eight hours' time profound torpor and sleep came on, when another emetic was given, and means adapted to rouse the child.

Tartar emetic solution was given every ten minutes in half grain doses, in order to relieve the lungs of the mucus. In spite of every effort, the vital energy began to decrease, and Mr. C. called in Dr. Barry, surgeon to the Maternity Hospital, who suggested the use of *galvanism.* It was immediately had recourse to.]

The strength of the galvanic current was at first comparatively feeble; the shock caused by its influence, although perceptible, was slight, and proportionally diminished after application to the different most sensitive parts of the body.

The strength was now increased by sulphuric acid, and a rapid current of electricity developed, to the powerful stimulus of which the infant was exposed, alternately applied to different parts.

The physiological effect was now apparent, and it was not until the regulator was moved to its highest point, and the flow of electricity had reached its maximum intensity, that complete signs of revival were produced, causing involuntary muscular contractions, with frequent voluntary efforts of the child to get released from its painful position. The galvanic influence was not deemed prudent to be discontinued for five hours, at the close of which sensibility was evident and complete, with restoration of the functions of the nervous centres. Gradual and progressive recovery continued, and in a few days the infant was perfectly convalescent.

Remarks.—The quantity of laudanum given in this case I ascertained with tolerable certainty (from an examination made of the portion that remained) to have been at least twenty-five minims, which was corroborated by Dr. Barry, who obtained separate pennyworths, procured by different persons, and his calculation tended to a similar result. From the enormous dose relative to the child's age, and recovery from its effects, a weak preparation was supposed to have been administered. Subsequent to the reading of the paper a portion of laudanum obtained from the same stock, which had been made for some time previous, was procured by Dr. Barry, which was subjected to Dr. Christison's careful analysis, and proved to have been of regular strength.

Dublin Medical Press, April 22, 1846, *p.* 244.

VARIOUS SUBJECTS.

82.—ON THE USE OF PHOSPHATE OF AMMONIA, AS A NEW REMEDY FOR GOUT AND RHEUMATISM.

By T. H. Buckler, M.D., Baltimore.

[The testimony in relation to the treatment of gout and rheumatism, is conflicting and contradictory in the extreme. While one author says that colchicum is a specific in both gout and rheumatism, another avers that it is sovereign in gout alone, and that its reputation in rheumatism is ill deserved. Another author considers this remedy efficacious in synovial, but of no service in the fibrous form of rheumatism. One writer extols topical applications in the acute form of these diseases, while another pronounces them fatal.

Gout and rheumatism are considered by some authors to be identical in character, while others declare them to be widely dissimilar. Both diseases, however, are frequently associated with what is called the uric or lithic acid diathesis, and when an individual labours under an acute attack of gout or rheumatism, his recovery is generally preceded by a redundant deposit of lithic acid in his urine. Dr. Buckler says:]

By what mode this acid is eliminated, or what accident it is which determines its separation, we are unable to say; it stands merely as an isolated fact that by some chemical or vital change taking place, uric acid is separated in great quantity and the individual is relieved. The urine in the course of such an attack may be examined and found as clear as water, and the fluid passed ten or twenty hours after, so loaded with lithic acid as to resemble the washings of a wine cask or beer barrel. From whence is this enormous quantity of lithic acid so suddenly derived? Not from any sudden defect of assimilation occurring in the course of the disease, or from the solids of the body. It is most likely then derived from the blood; but uric acid cannot have existed there in a free state, or it would have been passed from day to day. If then it existed in the blood, it must have been in some state of combination with soda, or lime, or both. And this is the more likely, when we reflect, that the concretions and thickenings which take place in the fibrous, cartilaginous, and white tissues generally, as before stated, are owing to the deposit in them of soda and lime in variable proportions with lithic acid. Taking into account these two prominent facts above stated, namely, the excess of lithic acid found in the urine at the period of convalescence from an attack of gout or rheumatism, and the subsequent deposit of soda and lime in the white tissues, it occurred to me, that during the existence of these diseases, the lithic acid might exist in the blood in a state of combination with soda and lime in the form of insoluble compounds, which the kidneys and skin refuse to eliminate. If then any agent could be found capable of decomposing the lithates of soda and

lime existing in the blood, and of forming in their stead two soluble salts, which would be voided by the kidneys and skin, we should thereby get rid of the excess of fibrin in the blood, the symptomatic fever and the gouty and rheumatic inflammation, wherever seated, which have been excited by the presence of these insoluble salts. It occurred to me that *phosphate of ammonia* might be the agent, provided it could be given in doses sufficient to answer the end without producing any unpleasant physiological symptoms. If our theory were true, phosphate of ammonia seemed to be the proper reagent, for it would form in the place of the insoluble lithate of soda, two soluble salts, the phosphate of soda, which is remarkably soluble, and the lithate of ammonia, which is also soluble, and both capable of being readily passed by the skin and kidneys. The excess of uric acid would thus be got rid of in the form of lithate of ammonia; and the soda, floating in the round of the circulation, (instead of being deposited, as it were, like an alluvial formation in the substance of the fibrous and cartilaginous tissues,) would be taken up by the phosphoric acid and eliminated from the circulation. Based on this theory I determined to try this salt, and it was not long after that a favourable opportunity presented itself.

[In one case Dr. Buckler prescribed as follows:—"Phosphate of ammonia ℥ss.; distilled water ℥vi.; a table spoonful every four hours," combining it with doses of musk. This was attended with complete relief in thirty-six hours. In another case he prescribed, on November 11th, "Phosph. ammonia ℥j.; water ℥vj.—M. a table spoonful every six hours." On the 18th the patient was well. "In this case *the ammonia was the only* remedy used."

In another case phosphate of ammonia was given with good effect in ten grain doses thrice daily, for several weeks.]

I have also used the phosphate in many old hospital cases of chronic rheumatism, that opprobrium of medicine; without a single exception, the patients have declared themselves better, and begged for a continuance of the medicine. The conditions in which it has been administered have not been so accurately noticed that I could report those cases so as to satisfy others. But the impression made upon my own mind is, that it is in these cases the best medicine I have ever employed—for in many of these cases, the patient had undergone for years various modes of treatment without benefit—and all were relieved in some degree under the use of this agent, when iodide of potash and other means had failed.

The foregoing carefully-observed and well-drawn up cases, by Drs. Frick and Power, should have their full weight, and induce others to verify his results.

In reviewing the cases which I have published, it will be noticed that thickening in the white tissues, of long standing, has disappeared under the continued use of phosphate of ammonia. Now it is in such cases that the lithic acid diathesis generally prevails, and this agent seems to act here, by depriving the blood for a long time of uric acid and soda, thus creating a demand for those ele-

ments in that fluid, and thereby bringing about a re-absorption, as it were, and solution of the superfluous lithate of soda which is deposited in the white tissues. As a result of rheumatism, we sometimes see arthrosis of long standing, where the joints are deformed or dislocated from transformation of tissue, and in gouty subjects we find calcareous deposits, often crippling the joints and interfering with the free play of the tendons. In such cases, we cannot hope for relief from this, or any other agent; but we may relieve the acute attacks which supervene in these chronic cases, and thus save suffering to the patient, and prevent the further increment of calcareous deposit. I have reported only those cases of acute rheumatism in which the phosphate of ammonia was, for the time being, used as a single agent, believing that these would prove more satisfactory to the reader; but I would not be understood as advocating the exclusive use of this remedy; to do this would be the work of an empiric. The leading remedies should be adopted here, as they are in pneumonia, in which disease the lancet is not dispensed with because antimony is used, notwithstanding the efficacy of this last remedy is universally acknowledged.

In acute rheumatism, the disease is seated in the blood, but then there are painful symptoms related with the alteration of this fluid, such as local pain, heat, and swelling in some part of the body, and increased force in the circulation; anodynes will mitigate the one, and the lancet moderate the other, until the primary indication is fulfilled in restoring the blood to its healthy condition. In the case of a boy aged thirteen, who suffered with acute rheumatism in the shoulder and back of the head, and in whose case there seemed to be some implication of the pneumogastric and glossopharyngeal nerves, there being difficulty in deglutition, great aversion to drinks, and irritable stomach; cups were applied to the back of the head, and the following remedies were given with the most perfect relief. Tinct. digitalis ʒj.; cyanide potass. gr. iij: hyoscyamus ℈ij; phosph. ammonia ʒij; water ℈iv. Two teaspoonfuls every three hours.

In the cases reported, it may also be observed, that in every instance in which lithic acid was present in the urine, it at once disappeared under the use of the phosphate of ammonia; and that in all those cases of gout and rheumatism in which, under ordinary circumstances, we might very naturally have looked for a lateritious sediment at the period of convalescence, the urine was remarkably limpid and free from precipitate of any sort. Under both circumstances the lithic acid must have been evolved in the form of soluble lithate of ammonia, the other element of the salt given having united with the soda of the blood, and formed the phosphate of soda, which was also eliminated in a state of solution. From the rapid disappearance of lithic acid from the urine in each case in which this salt was administered, we are led irresistibly to the conclusion, that the phosphate of ammonia must prove the best agent for dissolving uric acid calculus. I have thus far had no opportunity of testing its efficacy in this respect, but we know

that the common uric acid deposit is nothing more than a collection of very small crystals, each one of which is a very minute calculus, and that it is nothing but an assemblage of these particles which enters into the composition of the ordinary uric acid stone. When, therefore, these particles are collected into a mass in the pelvis of the kidney, ureter, or bladder, it is only necessary to saturate the fluids of the body with the phosphate of ammonia a sufficient length of time, and the calculus, however large, must be decomposed. When the lithic acid is combined with ammonia, a form of calculus sometimes met with, the phosphate of soda must answer a better purpose, and where the calculus is triple in its composition, the phosphate of ammonia and soda will no doubt be found to answer a better purpose than either of the single salts.

[Dr. Golding Bird does not appear to have noticed this remedy as a means of neutralising lithic acid; but Liebig proposes the use of phosphate of soda for this purpose.]

How is it that the valuable researches of Ancell, Christison, Andral and Gavarret, Prout, Liebig, and lastly, those of Franz Simon, should have furnished so few practical suggestions? For the last five years the medical press has been teeming with articles on the morbid conditions of the urine, hæmatology and animal chemistry generally, and yet how very few practical results, or even hints have grown out of these very numerous investigations and discussions. Those who have devoted their labour to the subject of hæmatology, have given their attention too exclusively to the organic contituents of the blood, and have bestowed less pains in inquiring into the relative proportions of the chemical ingredients of this fluid. We have information, valuable and conclusive, as to the abnormal alterations in the quantity of fibrin, globuline, albumen, but as to the excess or deficiency of soda, lime, magnesia, iron, urea and uric acid in the blood in different pathological conditions, we are not informed.

For example, Andral, in his immortal treatise on the blood, has established the fact beyond the power of contradiction, and contrary to the previous belief of the whole medical world, that in certain forms of anæmia, the fibrin is relatively increased over and above the normal standard. But he does not tell us at the same time, whether the iron contained in the blood is increased or diminished in quantity in this condition. And yet from the fact that the preparations of iron serve more than any other remedies to relieve chlorosis and anæmia, it is very natural for us to suspect that this abnormal condition may result from a deficiency of iron in the blood; this, however, may not be the case, for probably the action of iron in this condition is vital rather than chemical. But still an inquiry into the actual amount of iron would at once establish or refute the assumption.

On the other hand, those who have examined the morbid conditions of urine, have, we think, fallen into an error also in regarding an excess of salt found in this fluid, as a disease in itself, instead of which the presence of any abnormal ingredient ought to be regarded

rather as an expression of disease, or an index of the morbid condition of the fluids, or of the system generally. The elements composing a calculus in the pelvis of the kidney are in point of fact just as much without the body as if they were in a basin. It is unphilosophical to suppose that the kidneys can elaborate a salt without having derived the materials of such salt from the blood. And the inquiry is at once suggested, what part has the salt (which may be found evolved by the kidney), or the elements of its composition, played in relation with the other ingredients of the blood from which it has been derived? As, for example, it has been attempted here to prove that the matter of gout and rheumatism is an excess of lithate of soda in the blood, and the action of the phosphate of ammonia in the cases in which it has been tried, goes far to establish the proof. It is reasonable to suppose, then, that the presence of lithate of soda in the blood determines the formation of the excess of fibrin which is found in this disease, and why may this not be the case, whether the conversion of fibrin into albumen, or the reverse, be either a vital or a chemical act? If the conversion of the one into the other depends on the laws of life, then the presence of lithic acid or its combinations with other ingredients, is as foreign to the normal constitution of this highly vital fluid, and capable of giving to changes quite as great in the living elements of the blood as we see a sequestrum of any other foreign body produce in the organized tissues which surround it. And if on the contrary, the conversion of albumen into fibrin is accomplished through chemical agency, still the lithate of soda may play a part in bringing about this change, analogous to that which is effected by various agents, when brought in relation with different organized matters; as in the conversion of oil into a material resembling spermaceti, or the influence of a single drop of oxalic acid in changing a large quantity of thick syrup into a thin saccharine fluid. So that whether the agency of urate of soda is purely vital, or chemical, or partly both, its presence in the blood may play a part in relation to the other elements of this fluid, resembling that which the sequestrum is seen to do in the one case, and the drop of oxalic acid in the other. And thus each chemical ingredient of the blood, from its excess or deficiency, or by forming new compounds in different diseases, may, through vital or chemical agency (as before explained) modify the quantity or consistency of the organic elements of the vital fluid. But again, through vital or chemical agency, the fibrin and albumen are mutually convertible into one another, each in its turn retaining its proper vital integrity and primary chemical composition, as to the due proportions of oxygen, nitrogen, carbon and hydrogen, which enter into its formation. Now an excess or deficiency of some chemical ingredient of the blood may so modify this process as to cause an abnormal formation to take place. This new formation may only differ from fibrin in some slight alteration in the proportion of its ultimate elements and its unfitness for the purposes of the economy in health. But farther, the fibrin in this abnormal condition may, for aught we

know, constitute the matter of tubercle, which wafted in the rounds of the circulation, may be arrested in any of the tissues of the body, and there becoming endowed with new vital properties, take the form of gray semi-transparent particles which are first recognised by the aid of the microscope. And so an abnormal matter, similar in its mode of formation, but differing again as to its ultimate composition, may lay the foundation of the disease of Bright. It may be said by some that the physical appearance of these deposits is so very different from anything met with in the blood that such an idea is absurd. But it may be said, on the other hand, that honey is very different in its physical properties from wax, and so is oil from spermaceti, and yet, chemically, they are so very similar that it is extremely difficult to point out any real difference.

Indeed any one at all familiar with organic chemistry, is only too well aware, in making an analysis of the trivial accidents which often intervene in similar processes, to bring about different results: and he can readily see how an excess or deficiency of any one of the chemical ingredients of the blood may modify the organic elements of that fluid, and thereby convert them into materials for diseases of the solids.

American Journal of Medical Science, Jan., 1846, *p.* 110.

83.—*On Gout.*—By W. H. Robertson, M.D., &c.—[On what is often called gouty neuralgia, Dr. Roberton says:]

The sheath of the nerves is not an unusual seat of irregular gout, forming what is called gouty neuralgia. This is generally a severe and intractable complaint. It is probably the worst and most obstinate form of neuralgia, that does not depend upon organic changes, and is not therefore incurable. The history of the case—the individual having suffered from gout, or being predisposed to it, or having led such a life as to lead to the inference that the predisposition may have been induced—especially if strengthened by the presence of some symptoms of irregular gout, would serve fully to diagnose a case of this kind. The best and most speedy cure of this affection is to be found in a fit of regular gout. It may exist, in despite of all treatment, for years. It may have little effect on the general health; or it may derange it essentially, and superinduce serious or fatal disease,—most usually, as it has seemed, of the heart. Like all the other forms of irregular gout, it is, in most cases, traceable to the suppression, or retrocession, or imperfect development of the disease, and is very generally mixed up with general debility. The sciatic nerve is by far the most common seat of this form of gout; and sciatic gout is the name by which it is most commonly distinguished; but occasionally, although very much more rarely, the nerves of the face, or of the upper extremity, are affected by it. That it is essentially gouty in its nature, is, perhaps, sufficiently proved by its history, its *irregularly* paroxysmal character, its origin in the gouty system, and more or less directly from imperfectly developed gout, and by the immediate relief obtained by a developed fit of gout. In general,

this form of neuralgia is less influenced by change of weather than ordinary neuralgia; but there are too many exceptions to this, to make it of decided value as a means of diagnosis. If not the most immediately alarming form of gout, it is very tedious, uncertain, and difficult of management, and one that often exhausts the patience of the sufferer, if not of his medical attendant. A thorough change of habits, mode of life, place, kind of air and scene, is almost always indispensable to any hopeful treatment of this affection; and the occurrence of gout in some other tissue is what is to be most wished for.

[We suspect that many of these cases of sciatica are owing to affections of the kidneys, causing irritation along the course of the sciatic nerve. We generally find depositions of the different salts in the urine, and that the case is generally relieved by a course of liquor potassæ, and spare or temperate diet, avoiding all acids. A case mentioned by the reviewer, of *gouty neuralgia of the intestine*, may have been owing to a similar cause; it is related as follows:]

A gentleman, sixty years of age or thereabouts, and who, twenty or thirty years before, had suffered for a length of time with that form of bronchial irritation to which we alluded in a preceding page, had, at intervals of various duration, an attack of severe pain in the left iliac region; this part became exceedingly tender on pressure, so that it was generally deemed advisible to leech and foment the part, as well as to administer antiphlogistic medicines to keep down the febrile irritation that was present. The attack usually lasted for three or four days; but a certain degree of tenderness remained in the groin for several days longer. Several medical men had visited him, and more than one suspected that there was incipient organic mischief forming in the descending portion of the colon. If so, how came it to pass that the attacks were (irregularly) periodic, and that, in the intervals between them, the patient was quite exempt from all uneasiness? Upon the urine being tested in one of these intervals, it was found to be decidedly more acid than in health; and, coupling this fact with the circumstance that the patient had, at a former period of life suffered from a gouty complaint, we deemed it advisable to put him upon a course of alkaline medicines, and prohibit the use of all vinous and malt liquors. The result was most gratifying. For the next twelve months, he remained almost entirely exempt from a return of the abdominal attacks.

[Now the treatment here adopted would be more likely to relieve a lithic acid affection, and consequently to diminish irritation along the ureter than an intestinal affection. On the diagnosis between gout and rheumatism, especially between the chronic forms, Dr. Robertson is not very clear, and although no one can reasonably deny that there is a difference, yet, he has not assisted us in discovering what it essentially is.

The remarks of the reviewer on the treatment of what is called *rheumatic gout*, are so good that we cannot help quoting them at

large, remarking that they tend to corroborate the view we have just ventured to give respecting the sympathetic nervous actions, which disordered kidneys are disposed to produce. The reviewer says:]

After the most mature consideration of this subject,—based not only upon what has been written by the most experienced authors, but also upon the results of minute observation in practice—we have long since come to the conclusion that genuine uncomplicated rheumatism, whether it be of the acute or chronic form, is always connected with an excess or redundancy of the fibrinous constituent of the blood. Many circumstances seem to favour this idea. The disease very generally occurs in persons of a plethoric habit of body, and who are liable to inflammatory disorders, either from a congenital predisposition, or from an excessive consumption of strong and nutritious food. The state of the blood too, when drawn, very generally shows that there is a redundancy of fibrine; and when any serous surface becomes the seat of the rheumatic inflammation, it is well known that there is almost invariably an effusion of coagulable lymph. Moreover, what is the medicine which of all others appears to have the most prompt and decided effect, not only in causing the absorption of the lymph that has been already effused, but also in defibrinating (so to speak) the condition of the blood? Is it not mercury? And is not this the very remedy on which we can best depend for the relief of many of the most serious and distressing symptoms of rheumatism? If the system once becomes gently mercurialised, not only do the present sufferings of the patient almost immediately subside, but the existence of any internal mischief is generally counteracted and subdued.

In saying this, however, we do not wish it to be understood that the treatment of rheumatism should be left entirely to the exhibition of mercury. Moderate venesection may be, and very often is, unquestionably useful; it controls excessive febrile action, and at the same time powerfully promotes the curative operation of other remedies. Then, again, the secretion of the kidneys is almost always very sensibly deranged; usually it is sparing in quantity, and also highly charged with its peculiar principles, which, if not duly eliminated from the system, invariably aggravate all pyrexial irritation.

Whatever may be said of the theory we advocate, we can vouch for the very general success which will attend the practice that is based upon and derived from it: viz. that the use of a mild course of mercurial alteratives, and of saline, and especially alkaline, diuretics; the occasional moderate detraction of blood, either generally or locally; a light and lowly animalised diet; and a most rigid abstinence from all fermented liquors, more especially from those which contain much glutinous and nutritious principles, such as porter and ale. We have almost daily occasion to witness the good effects of entirely prohibiting all such stimulating drinks in chronic rheumatic ailments, and we are not unfrequently surprised to find

that many medical men seem to neglect so much the regulation of their patient's diet, while cramming them with physic;—the very virtues of which are often directly counteracted by the pernicious *ingesta*, that are allowed to be taken at the same time. We need scarcely to say that warm clothing is another essential adjuvant in the treatment of all cases of rheumatism. Its use is the more necessary, when we administer mercury and diuretics; as the action of those remedies invariably renders the cutaneous surface more sensitive to atmospheric impressions than it was before.

If the view which we have now taken of rheumatism be correct, it is sufficiently obvious that the morbid condition of the blood, upon which it is believed to depend, may be associated with a cotemporaneous dyscrasis of the circulating fluid of a different nature. Along with the excess of fibrine there may be, for example, the presence of an abnormal acid matter, such as we have every reason to believe exists in genuine and uncomplicated gout. If such be the case may we not reasonably suppose that the phenomena, to which this compound morbid state may give rise, will have a compound character, partly rheumatic and partly gouty? Such is the view that we take of what is called "rheumatic gout" —a malady, we feel assured, that is of very common occurrence, in spite of the repeated contradiction of our author.

[In the treatment of gouty inflammation, Dr. Robertson does not advise the application of leeches, but the reviewer is of opinion that a gentle oozing from a few leech bites, kept up by warm fomentations, is decidedly beneficial; the part should be kept covered, and the day following a *tepid* spirit lotion applied. Sir C. Scudamore recommended one part of spirit to three of camphor mixture; the reviewer adds that the addition of a little vinegar will often be found grateful. Dr. Robertson considers colchicum as a narcotic as well as an evacuant. The reviewer remarks that:]

The *primary* effects of the medicine seem to be exerted upon the mucous surface of the stomach and bowels, stimulating their secretions, and powerfully affecting their nerves, (in a manner, there is reason to believe, similar to that of veratria upon the skin); its *secondary*, are directed more immediately upon the kidneys, exciting them to a more active elimination of lithic acid, and probably too of other nitrogenised elements, from the system. The action of the remedy is therefore twofold; first on those organs engaged in what Dr. Prout has called the process of *primary assimilation*, and afterwards on some engaged in the process of *secondary assimilation*. According to this view, colchicum ought to be very useful in many other maladies besides gout and rheumatism; and so it unquestionably is. We have found it often produce excellent effects in various cerebral and hepatic disorders, more especially when these occur in full and plethoric habits. In the early stage of acute hydrocephalus, it may be given with great advantage; and, in short, in almost every disease, in which we wish to make a strong impression on the intestinal canal and on the kidneys. As a general remark, it may be well to state that, whenever we have reason to

suspect that the bowels are loaded or the intestinal secretions much depraved, the use of colchicum should always be preceded by some active purgatives in combination with a mercurial. This is just what might have been anticipated, considering the *modus operandi* of the drug. By its peculiar influence on the intestinal surface, it acts as a powerful derivative of the distal irritation that is present in the hands or feet; and, if this revulsion takes place before the bowels have been cleared of their offensive contents, the morbid action may fasten itself upon some vital organ, and give rise to the most alarming symptoms. Whoever has tried upon his skin the effects of veratria (and the *veratrum* belongs to the same natural family as the *colchicum*), will remember the peculiar effects which it has upon the cutaneous nerves; and the continued tingling irritation, which it produces, has, it is well known, often relieved the most painful neuralgia—although there has been no narcotic nor directly sedative operation experienced, as when the active principle of aconite, and such like plants, has been used. Now, is it not possible that colchicum may act in a somewhat similar manner upon the nerves of the alimentary canal? and, if it does, can we be surprised at the pernicious effects which it may occasion, while the *materies* morbi is yet uneliminated from the system.

The too common practice of calling colchicum a specific for gout has given rise to the most unscientific, and, unfortunately too, the most pernicious errors. Its use may relieve pain, and it may powerfully assist in promoting the expulsion from the body of the peccant matter that is invariably present to a greater or less extent; but it will never by itself serve to prevent the new formation of this matter, nor can it even cure some of the worst sufferings to which gouty patients are liable. We cannot, therefore, go so far as Dr. Robertson, and admit with him that "so much power has this wonderful drug on gouty action, that it enables us, in a very great degree, to prevent, relieve, or modify its manifestation."

Fortunately, the use of this potent remedy is not necessary in a vast number of cases of chronic gout. The exhibition, continued for some time, of mild alkalies, and the regulation of the diet, so as to prevent as much as possible the formation of acid during the process of digestion, with due attention to the state of the alvine excretions, will do more for the effectual and permanent relief of our patient, than the use of colchicum, or of any boasted specific in the world.

The great diminution, in point of frequency, of gout during the last thirty years in this country, is obviously attributable to the much greater temperance in the vinous liquors that has prevailed since the close of the last war. Men now-a-days eat quite as much as ever they did, and are, we verily believe, quite as plethoric as they used to be; but they certainly do not ingurgitate so much port wine—the true "fons et origo" of a vast deal of gouty disease. Persons, who have a tendency to the malady, and who yet have not the control over their appetites to resist the use of vinous and malt liquors, should be instructed to take a scruple of carbonate of soda

or a little calcined magnesia about two hours after their dinner: this will serve to neutralise the acidity that is developed during the process of digestion. Sir H. Halford was much in the habit of prescribing a rhubarb and soda pill, forenoon and evening, to his gouty patients: the practice is a very good one. The stomachic remedy well known as Gregory's powder—consisting of rhubarb, magnesia, and ginger—is also very serviceable, if taken an hour or two after meals. It should ever be remembered, that the foundation of rational treatment of the gouty diathesis must be the correction of the disordered assimilative functions, and the neutralization of the peccant acid matter already introduced into the system;—the intestinal and renal excretions having been first brought into a healthy state. The fountain-head of the evil is in the chylopoietic viscera; if the spring be troubled, how shall the streams be pure? To ascertain this cardinal point, the condition of the alvine and urinary evacuations must be known; such knowledge is as necessary for the judicious treatment of gout, as that furnished by the auscultatory exploration of the chest is for the treatment of dyspnœa or acute rheumatism. Unless the physician makes himself, every now and then, acquainted with the chemical properties of the urine, his practice *must* be empirical, and *may* be often most injurious.

Medico-Chirurgical Review, Jan. 1846, *p.* 88.

84.—*Treatment of Acute Rheumatism.*—By Dr. Griffin.—[Dr. Griffin points out the success attendant on the administration of large doses of opium, in inflammatory affections, both of mucous and serous membranes, and also of the fibrous tissues. The error, he considers, particularly in the treatment of inflammation of mucous membranes, to consist in giving too small a quantity for a dose, by which the secretion from the inflamed surface, (nature's relief of the disease) is checked, without the inflammation being subdued. He contrasts the effects of opium in the treatment of acute rheumatism, with other remedies, which are particularly relied on; as bleeding, colchicum, emetic-tartar, &c. and considers that opium generally is most effectual; and there is less danger of relapse, or what is worse, of metastatis, under its employment. When it produces systematic disturbance, Dr. Griffin combines it with calomel, and makes use of moderate bleedings, and recommends this combination where the fibro-serous membranes are implicated. We extract the following from the *Medico-Chirurgical Review* for January, 1846, where Dr. Griffiin's treatment is brought under consideration.]

How should Acute Rheumatism be treated?—In passing the various modes of treatment under review, Dr. Griffin observes that *free depletion*, from a mistaken supposition of the identity of the disease with ordinary inflammation, is discountenanced more and more as our experience of the disease increases. "It will indeed appear that the average period occupied in the cure by it is longer, the success more doubtful, the pain more considerable, the danger of metastasis and of relapse greater, and the convalescence more

tedious, on comparing it with other methods to which we shall presently advert." *Colchicum*, aided by moderate depletion and antiphlogistic regimen, is generally successful. Dr. Griffin has occasionally found, as well as Dr. Hope, obstinate and even dangerous diarrhœa attend its use, and by no means considers it either the most certain or most safe remedy. *Tartar-emetic* has been given by Dr. Griffin in even larger doses than Laennec and Louis employed, viz., a grain every hour for many consecutive hours. The first dose or two were usually vomited, but if tolerance then ensued the cure was often astonishingly quick, in cases even of many days' prior duration. Diarrhœa sometimes occurred, but it was generally easily arrested. It failed in its effects, however, in more than two-thirds of the cases. "On the whole it appears evident, that while the emetic tartar administered in large doses occasionally displays a singular and extraordinary control over acute rheumatism, we are yet at a loss to determine in what cases it is more particularly successful, or how its influence can be more extensively applied."

The author next adverts to the modes of treatment employed by Drs. Corrigan and Hope as far superior, as regards their certainty, the time occupied, and the freedom from metastasis or relapse, to any others. In all these advantages the one is little superior to the other; but in some cases the one, and in some cases the other plan may be most advantageously adopted, while in a third category the two modes may have to replace each other. Dr. Corrigan's treatment consists in the administration of one or two grains of opium every second or third hour, or of ten, twelve, or more grains in the twenty-four hours. He dwells upon the importance of the dose being thus sufficient and full, a less quantity, given seldomer, only producing the stimulant and injurious effect of the drug.

"The opium should always be increased in dose, both as to frequency and quantity, until the patient feels decided relief; and should be then kept up at that dose until the complaint is steadily declining. The first indication that tells the practitioner that he has reached the proper dose, is the statement of the patient, who, in reply to an inquiry as to how he has passed the night, probably says that he has not slept, but that he is free from pain, and feels comfortable. This effect having been attained, the opium may then be continued in repetitions of the same dose as to frequency and quantity."—*Corrigan.*

Dr. Griffin has, however, found in some cases stupor, headache, and constipation (although in many others the bowels continued quite regular), obliging him to have recourse to Dr. Hope's plan. This consists in the administration (after one or two bleedings in the robust only), of gr. v ad x hyd. sub. with $1\frac{1}{2}$ and 2 gr. opium every night, and a purgative, which will act four or five times at least, every morning. The following draught, given three times a day, expedites the cure. ℞. Vin. Colch. ♏x-xx. Pulv. Ipec. co. gr. v. M. Salin ʒx. Syr. ʒj. M. When the pain and swelling are much abated, which usually happens within two, and almost always within

four days, and before this, if any tenderness of the gums occurs, the calomel is omitted, continuing one grain of opium at bed-time, and in some cases at noon, as also the colchicum draught, and morning senna purge. Dr. Griffin observes that, where a sore-mouth supervenes, the cure will have to be completed by the opium plan; or, if there is not much pain left, by quinine and potass. hydr. "Salivation can never occur in these cases, any more than in abdominal inflammation, or in cholera, unless the use of calomel be persevered in after the symptoms have completely given way, and a cure in part effected. So long as acute disease lasts, mercury will not salivate, but a single dose given after the disease has given way may do so, and the difficulty of avoiding it generally arises from the influence of our own apprehensions, which tempts us to continue the remedy beyond the absolute necessity, for fear of a relapse.

Disease of the heart is rare under either of these modes of treatment; but when discovered, large and repeated doses of calomel and opium are essential. When the rheumatism threatens a chronic form, or the attendant fever assumes a hectic character, quinine or the hydriodate of potass in full doses are of great use.

Medico-Chirurgical Review, Jan., 1846, *p.* 60.

85.—*On the Use of Cod-liver Oil in Chronic Rheumatism.*—By Dr Bradshaw.—[In the Retrospective Address on Medicine, delivered at Northampton, in 1844, by Dr. Cowan, there is especial mention of the therapeutic employment of this substance. It appears to be particularly useful in all cases characterised by deficient action—as "phthisis, chronic rheumatism, rickets, &c." It augments animal heat by supplying carbon to the system, and it also increases the coloured globules of the blood; it is easy of digestion, and unlike other oils, does not cause diarrhœa. Dr. Bradshaw has used cod-liver oil with success in the treatment of chronic rheumatism. One of his patients had been in the Indian army, and exposed to great hardships; at the battle of Seringapatam he was obliged to stand up to the middle in water for many hours, and from that day, he had never had the perfect use of his limbs, and was racked with agonising pain, which he allayed with small doses of crude opium, which he swallowed from time to time, without which life would have been insupportable. Dr. Bradshaw observes:]

I suggested to him the use of train oil, to which he readily assented, declaring that anything was better to him, however obnoxious to the palate, than the constant pain he had endured. Knowing that some of the Russians made choice of the blubber portion of oil, I deemed it advisable to administer it in this form, and began with a tea-spoonful three times a day on a little water. The distress, however, occasioned to the stomach by constant vomiting caused me to desist and procure for him the clear oil, which may be drawn from the upper part of the cask. This I ad-

ministered on a little gin, and augmented the dose daily until he was able to take the half of a wine-glassful morning and night. The improvement in this patient was daily remarkable; his countenance assumed gradually a cheerful aspect; he rapidly gained flesh; his bowels, which had heretofore been costive and troublesome, acted daily; his sleep was refreshing; he threw aside one staff, and then the other; his physical energies by degrees returned to him, and I had the pleasure of seeing him six months afterwards with his gloves and mattock trimming the hedges of a neighbouring farmer, with the full sweep of vigorous manhood.

[Another case in which Dr. Bradshaw used this remedy, was an old midwife, seventy-one years of age, of thin spare habit, and costive bowels; with ardor urinæ. She had been subject to rheumatism forty years, and had taken sedatives for some time to allay her pain. Dr. B. adds:]

The formidable nature of the case, however, urged me on, and with the patient's consent I gave the tea-spoonful of oil as in the former cases, three times a day, increasing the dose until she could bear a full wine-glass; but it is remarkable that the stomach revolted if the dose was given on any vehicle but that of strong whisky. The daily improvement here was equal to anything I had ever seen; she certainly appeared to grow younger; the constipation of the bowels subsided; the ardor urinæ was no longer troublesome, and this woman spent many years afterwards in the glories of longevity, attributing her happiness to the effects of the oil.

[Although many cases of chronic rheumatism may be cured or relieved by the use of cod-liver oil, yet it should not be given in those cases where dyspeptic symptoms co-exist, since, in these cases, the alimentary disturbance often arises from the admixture of fatty matters with the contents of the canal; but where it is admissible, its use should be daily kept up for a month at least. Dr. Bradshaw remarks:]

I have been in the habit of administering the remedy in various vehicles, as circumstances required, or the condition of the patient demanded, such as cinnamon and peppermint waters, thin gruel, milk, and the alcoholic potions mentioned in the former part of these notes, but I give the preference to a thin infusion of linseed, flavoured with lemon peel, and sweetened to please the palate. My mode of giving the oil with this is in form as follows:—I pour a small quantity of infusion into a glass, on which is added the oil, and again another small quantity of infusion upon it. In this manner the dose may be swallowed, and will slip down without offending the palate, and generally is well retained even by irritable stomachs. Another mode has been successful when many have failed, and will be found equally valuable: it is the yolk of an egg beat up with boiling water and sugar, with which may be mixed a dessert-spoonful of brandy, and on this the dose may be given without producing that nausea so frequently experienced when conveyed by other vehicles.

Provincial Medical and Surgical Journal, Dec. 31, 1845, *p.* 753.

86.—*On the Modus Operandi of Colchicum in Rheumatism.*—By Dr. C. J. B. Williams, F.R.S., &c.—[In the treatment of rheumatism, colchicum is to be generally relied upon, but should many joints be affected, and the fever and inflammation run very high, then bloodletting and mercurial purgatives must be superadded. When the pain is of a nervous character, then opium or morphia are useful. Dr. Williams does not consider that colchicum cures rheumatism by acting as a purgative, but that it operates chiefly by assisting the kidneys in the elimination of morbid matter. He says,]

I have no doubt that it acts chiefly in promoting the elimination of excrementitious matter through the kidneys. You have had several opportunities of observing that as the patient got better, the urine increased, either in quantity or in specific gravity, or in both. Sometimes there has been a copious deposit of lateritious sediment, and this is the most favourable case: but it is not essential; for in other instances the excrementitious matter is eliminated in the form of dissolved urea, and then there is no deposit. This, I believe, is the true mode in which colchicum cures rheumatism and gout; and this explains why it acts most favourably when it does not disorder the bowels.

[After the pain and inflammation have subsided, Dr. Williams directs the continuance of the colchicum for a week or ten days, to get rid of the rheumatic matter from the system. He combines it with a mild tonic; afterwards he substitutes iodide of potassium, and improves the patient's diet.]

Medical Gazette, Dec. 26, 1845, *p.* 1487.

87.—*The Nature and Treatment of Cancer.*—By W. H. Walshe, M.D., &c. &c.—[In the *British and Foreign Medical Review*, for January, 1846, is a notice of Dr. Walshe's work on the Nature and Treatment of Cancer. Dr. Walshe considers this disease no longer as a local external surgical malady, but as a true constitutional disease, of which the local manifestation is a small, and often unimportant feature.

Dr. W. puts the diagnosis of the disease, when it affects internal organs, in a much clearer light than heretofore.

The reviewer observes, that the strongest proof of the constitutional nature of cancer, is the fact established by Dr. Walshe, that the knife should only be had recourse to in the extirpation of the local affection, in a very small proportion of cases. Dr. Walshe commences stating his views on the nature and progress of cancer, by saying,]

I had scarcely commenced the study of adventitious products, before I became convinced that much of the obscurity pervading the subject arose less from its nature, than the erroneous manner in which its investigation had been conducted. I found observers had overlooked the fact, that the higher orders of these products were real existences developed within existences, and possessed of

two distinct modes of life: a life, subject to its variations of health and disease, irrespective of the organism in which they had taken birth; and a life influenced by the conditions of the various structures and functions of that organism. I saw that phenomena, accessory and contingent, were confounded with others necessary and essential; and that, as a natural consequence, misapprehension of many pathological relations had followed. Desirous of removing this source of unsound doctrine, as it affects the most important of adventitious growths, cancer, I have separately considered (on the plan habitually employed in my lectures) the healthy and diseased conditions of vitality of that product.

The following is the view which, I conceive, may be taken of the nature and sequence of the phenomena of the disease. A certain constitutional state exists, and may continue to exist for a variable period without giving functional evidence of its presence, although the blood and solids of the body are specially modified. In consequence of local injury, or otherwise, exudation takes place; upon that exudation the constitutional state has impressed special attributes and tendencies; among these attributes ranks an intrinsic power of vegetation. This vegetating faculty of the exudation reacts on the system by constantly draining it of a portion of its nutrient materials,—the progeny feeds upon the parent organism, and the first phases of evolution is accomplished. But the natural tissues have been so modified in properties by the constitutional state, that they are incapable of resisting the encroachments of the vegetating exudation, and hence become the seat of atrophous, ulcerative, and other modes of destruction. Discharges of various kinds now still further drain the system of its fluids, and impair its vital energies; and the second phasis is established. Meanwhile, secondary alteration of the blood is effected; this fluid becomes the vehicle for the circulation through the system of elements possessed of a germinating force,—these stagnate, are deposited, and new local vegetations spring into life and activity. The same series of phenomena is again and again gone through; until the system, drained of its reparative fluids in feeding exudations and supplying discharges, exhausted of almost every drop of pure blood through the influence of secondary cancerous impregnation, paralysed in its nervous energies by physical anguish and deficiency of pabulum, sinks in the struggle against the superior powers of the new existences it has created,—and in death is closed the third phasis of the disease.

Of Compression in the Treatment of Cancer, more especially by means of Dr. Arnott's Apparatus.—In the year 1809 Mr. Samuel Young conceived and acted upon the idea that the continued nutrition of scirrhous tumours might be completely prevented, and the absorption of existing substance insured, by submitting them to methodic compression. The results of the practice, as made public by himself, have been condensed as follows by Dr. A. L. J. Bayle. The number of cases given is nineteen; of these, seventeen relate to cancer of the breast, two to ulcers of the cheek and upper lip.

Twelve cases terminated by cure; five were considerably benefited; the two cutaneous ulcers improved somewhat. The majority of the tumours were hard, irregular, tuberculated, and the seat of lancinating pain; six of them were ulcerated, and discharged ichorous pus. Even in the worst cases the tumour diminished in size, but the patients fell victims to the diathesis.

In consequence of Mr. Young's announcements, the plan was tried at the Middlesex Hospital, and a committee appointed to report upon the results. The conclusion of the report, drawn up by Sir Charles Bell, was, that compression could not be regarded as a "specific cure, and had no claims to notice, *except for its power of alleviating pain.*" But, as was justly rejoined by Mr. Young, much of the want of success described may have arisen from defective management of the plan; no details of the cases are given. The spirit in which Sir Charles Bell judged, may be inferred from the allusion to the mode of treatment as a specific; a character with which Mr. Young never sought in the remotest degree to invest it; it would, in truth, be just as wise, observes the latter, to speak of the pad of a hernial truss as a specific against strangulation, as to assign the character to compression in cancer.

The testimony of Mr. Travers is favourable to the practice. He has known tumours, such as those already described, "gradually reduced, and at length absorbed by equal and persevering compression, as by strips of soap and adhesive plaster, or, what is better, by an elastic roller passed many times round the chest, with layers of the amadou smoothly interposed between the turns of the roller." M. Recamier has employed compression upon a very large scale, and the more important part of his results is as follows:—"Of one hundred cancerous patients, sixteen appeared to be incurable, and underwent only a palliative treatment; thirty were completely cured by compression alone, and twenty-one derived considerable benefit from it; fifteen were radically cured by extirpation alone, or chiefly by extirpation and pressure combined, and six by compression and cauterization; in the twelve remaining cases the disease resisted all the means employed. M. M. Blizard and Masson have published three cases, and M. Carron du Villards three others,—in all of which irregular nodular scirrhi, the seats of lancinating pain, &c., were removed by compression. Dr. A. L. J. Bayle gives, as the general results in 127 recorded cases, 71 cures, 26 instances of improvement, 30 of total failure. These results, the most favourable on the whole that can be adduced in favour of any mode of treatment, bear scrutiny of the severest kind. It is no doubt true, that, in some of the cases alleged to be cancerous, neither of the anatomical species of that affection existed; but it is on the other hand perfectly unquestionable that many of the absorbed growths were not only actually scirrhous, but had already become the seat of ulceration, when submitted to compression.

Difference of opinion has existed as to the best mode of applying compression. M. Recamier employs perfectly smooth disks of

agaric, laid over each other, and retained *in situ* by a roller, as the compressing materials. M. Begin sometimes substitutes a laminated plate of lead, modelled to the tumour, and surmounted with a pyramid of graduated compresses. This application (which is far from a novel one) frequently becomes painful, and cannot be endured. M. B. recommends a renewal of the apparatus every day, or every second day. M. Begin thinks it better to change only when the bandages grow loose; and prefers, in consequence of this view, an elastic corset, capable of accommodating itself to the decreasing size of the part, as the compressing agent, wherever circumstances admit of its use. But all contrivances of these kinds are ineffectual, for various reasons: in the first place, they exercise unequal and irregular pressure on the tumour; in the second, they confine the movements of the chest to a degree varying with the amount of constriction; in the third, the force employed is not directed against the diseased mass alone, but wasted in great measure upon the healthy parts; and, in the fourth, while the difficulty of applying the apparatus effectually is extreme, it invariably loosens and becomes more or less disarranged within a short period after its application. Besides all this, the least unevenness in the material lying next the diseased structures renders the compression unbearable, from the pain it produces. These are the chief reasons, doubtless, which have hitherto prevented compression from taking its ground as a general system of treatment of various external cancers.

Dr. Arnott's Plan.—The fertile ingenuity of Dr. Neil Arnott (already so successfully and so variously employed in devising mechanical means of relieving human suffering) has triumphed over these difficulties. Dr. Arnott has invented a method of applying compression, which, while it is free from all the objections mentioned, is philosophical in principle, and possessed of peculiar practical excellencies. His apparatus consists of a spring, an air-cushion supported by a flat resisting frame or shield, a pad, and two belts. The spring, which is of steel, is the compressing agent,—its strength being varied with the amount of pressure it may be desirable to obtain. The shield varying in shape somewhat with the circumstances of particular cases, is generally slightly convex on the external surface, of circular or oval outline, and formed of a rim of strong wire, connected at two opposite points by a flat piece of iron, which serves for the support of the spring, screws, &c., the whole being covered with jean. To the rim of this shield is sewn a sort of conical cap of soft linen, designed to receive the air-cushion, to keep it *constantly slack*, and prevent it from slipping about when applied. The air-cushion thus kept slack fashioned into a sort of double night-cap, lying in apposition with the inner surface of the shield, and sufficiently filled with air to prevent the latter from pressing directly on the part, and receives within it the tumour to be compressed. One end of the spring is attached by screws to the external surface of the frame, and the other end to a solid but soft pad, placed wherever the counter-pressure is to be made. The

straps are used to keep the apparatus steadily fixed. Let us suppose that the breast is the region to which the instrument is to be applied; the position of its various parts will appear, as they are represented in the figures. The spring may either be passed over the shoulder or round the waist; the latter mode of application suits best, when the tumour is seated towards the external border of the breast, and inclined to slip towards the axilla.

The mechanical advantages of this mode of compression are, that the movements of the thorax are not interfered with; that the amount of pressure may be regulated to a nicety; that the whole morbid mass undergoes constant, equable, and uniform pressure; that the part is protected from external injury, (a point of serious importance); and that, unless in a very few exceptional cases, the apparatus may (either with the shoulder or waist-spring) be very easily arranged, It is necessary that the amount of pressure should be low at first (say 2lbs.,) especially in the case of nervous, irritable people,—in fact, that the instrument should rather supply a support for, than exercise pressure on, the part; that the entire morbid structure (as well as any connected loose soft parts, which might be injured by accidental pressure of the rim of the shield), should be included within the cushion; and that in all cases there be a distinct thickness of air-cushion between the shield and the skin.

The eff cts produced by pressure are removal of existing adhesions, total cessation of pain, disappearance of swelling in the communicating lymphatic glands, gradual reduction of bulky masses to small, hard, flat patches or rounded nodules (which appear to be, both locally and generally, perfectly innocuous,) and in the most favourable cases total removal of the morbid production. The relief of pain afforded by the instrument is, without exaggeration, almost marvellous; this effect is insured by the peculiar softness and other properties of the air-cushion, the medium through which the pressure of the skin is transmitted to the surface. Females unable to obtain sleep even from enormous doses of laudanum, cease instantaneously to suffer on its application; and sleep thenceforth, as though they were perfectly free from the disease.

There are certain conditions which either interfere altogether with the use of the instrument, or reduce it to a merely palliative agent. These conditions are, more particularly, excessive bulk of the new growth, and such localization of this structure as place any portion of it beyond the reach of pressure. Persons of irritable skin and temperament, and prone to become œdematous or anasarcous, are with some difficulty manageable. Less is to be expected in cases of encephaloid cancer than of the other species, and in cases of infiltrated than of tuberous accumulation. If the morbid mass be extensively softened, ulcerated, or in a state of fungous vegetation, palliation is all that can be fairly hoped for. Adhesion to the skin is of untoward influence. As a means of controlling and averting hæmorrhage, the slack air-cushion pressure is of high utility.

Pressure on Dr. Arnott's system, is applicable to cancerous tumours in every situation where a bony or other solid support exists behind the growth, and where a point for counter-pressure can be had. The mamma, the limbs, the surface of the thorax or cranium generally, are the seats in which the mode of treatment is most readily applicable. I see no reason why cancer of the testicle might not be treated thus; and gentle pressure on this plan deserves a trial in certain cases of cancer of internal parts (it would surely relieve pain), provided the general functional relations of those parts do not interfere (and they will often not do so) with the adoption of such pressure.

The system of pressure now described, useful as it is independently of all other treatment, may be rendered more efficacious by the association of other external means and internal remedies. The following case exemplifies the power of such combinations:

Case of Cancer by Dr. Walshe.—I was requested (March 3rd, 1843) by Mr. Langley, to see a lady affected with scirrhus of the breast, which it was proposed to remove with the knife. Exactly five months and a half ago was attracted by slight pain to the right breast and found there a lump about the size of a small hazel-nut, not tender to the touch, unattended with soreness or discoloration of the skin; it increased but little in size till the last six weeks, within which time it has enlarged to its present bulk; suffers scarcely any pain in the tumour itself, but has lancinating pain above the nipple in the indurated part of the gland to be presently described. In its general outline the right breast is double as large as the left (it has always been somewhat the fuller of the two); the subcutaneous veins more visible than on the opposite side; at the axillary border of the gland is an excessively hard, solid, defined, rather moveable tumour; the finger may almost be slipped behind this, but at its inner edge it is continuous with another indurated mass, obviously a portion of the mammary gland itself in a state of infiltration; the tumour is finely knotted on the surface, the infiltrated part somewhat more largely so; besides this, the substance of the gland is indurated and knotty, especially above the nipple; the nipple is less prominent than on the healthy side, but is not actually drawn in; the areola is unaffected; there are no adhesions of the skin or alterations of its texture; no enlarged glands in the axilla, but slight thickening and hardening of some of the absorbent vessels leading thither; no discharge of blood even from the nipple; when the tumour examined, not painful, but a short while after became so. Measurements: whole breast $4\frac{3}{4}$ inches broad; $3\frac{1}{4}$ inches vertically; tumour $1\frac{3}{4}$ inches broad, $1\frac{1}{2}$ inches vertically. The soft parts about are flaccid and yielding. I recommend the following pill: ℞. Arsenici ioduret. gr. j. extract. conii ℈ij. in pill xvj. dividend: j. bis die s. Light nutritious diet; moderate walking exercise. March 8. Applied the slack air-cushion (diameter of bag $6\frac{1}{4}$ inches, pressure of spring $3\frac{1}{4}$ pounds): the whole mass of the breast included, except about half an inch at the left superior angle, where merely cellular tissue. No

annoyance of any kind experienced by the patient, except slight impediment to respiration, which ceased in a few minutes. March 10. Pain totally removed; size of general mass of breast somewhat diminished, but the tumour is only rendered more prominent and apparent by this. No inconvenience is experienced from the instrument except in the back; the patient being thin, the pad presses uncomfortably on the spine. March 12. Tumour appears very distinctly reduced in bulk, more elastic, less stony in feel, less pointedly knotty on surface, less sharply defined: all these changes are to a very small amount, but they are nevertheless positive. Catamenia for last two days. March 30. Tumour (which has been gradually decreasing) is now scarcely more than half the original size; some slight indication of absorbents with tenderness of the skin, and slight redness: nothing in axilla; (instrument much disturbed yesterday in the carriage, and edge pressing against skin.)

From this period until the middle of August the progress of things was slow and interrupted; twice, at the menstrual period, the tumour enlarged slightly, without however becoming painful. I gradually increased the force of the spring (which had always been carried over the shoulder) to six pounds, and diminished the diameter of the bag $3\frac{1}{2}$ inches,—by which a great increase of pressure was obtained; and, at the date named, the tumour was about one-third only of its original size, had become freely moveable under the skin, and the general knottiness and hardness of the gland had almost disappeared; patient had lost altogether the headaches which used to torment her. I now lost sight of the patient (first through my own, and then her absence from town) till the middle of November. During all this period the instrument had been more or less neglected, and not applied at all for the last month: the use of the pills had also been interrupted. November 23, 1843. The tumour is now at least half as large again as when I first saw it; it is more painful than ever, and has reacquired all its original characters; it is, however, still non-adherent. I re-applied the cushion of the diameter first used, and within a week a favourable change had taken place; the tumour continued thenceforth to diminish in size, until it was reduced to the size of a hazel-nut. This little nodule appearing immoveable, I (at the close of January, 1844) directed the iodide of lead ointment to be smeared on the part twice daily, the pressure being at the same time continued. The effect was almost immediate, so much so that the patient, after the lapse of a fortnight, requested to be allowed to use the inunction without the pressure: the impulse to absorption had been given; the tumour steadily decreased in size, and had totally disappeared at the close of April, 1844. I have within the last few days (August, 1845) examined the breast, and found it in every respect like its fellow, *without a vestige of tumour or induration of any kind.*

Here then was a tumour, which (though it had so far not given rise to any of the more terrible evils appertaining to cancer) yet

possessed in the clearest and best defined manner the sum of characters assigned by universal experience to growths pursuing the common course of that disease; and this tumour disappeared completely under the persevering use of the means described. Had the growth been removed with the knife, the chances (as will fully appear in the sequel) are extremely strong that, within the present period, the disease would have reappeared, and perhaps destroyed its victim. But from the very perfection of success in this and similar cases an objection may arise in some minds. It may be urged that, as in such cases a mass, composed of indefinitely vegetating cells, is removed from its original site by absorption, the displaced cells may in some new abode germinate and flourish. But the objection is a fallacious one. The absorption effected in such cases must, on physiological grounds, be considered of the kind I have termed *unproductive*, and clinical experience, so far as it has yet gone, corroborates, in the non-reproduction of tumours thus dispersed, the justness of the physiological principle.

British and Foreign Medical Review, Jan., 1846, *p.* 219.

88.—*On the use of Muriate of Barytes in the Treatment of Scrofulous Affections.*—By A. J. Walshe, M.D., F.R.C S.I., &c.—[Dr. Adair Crawford was the first to call the attention of the profession to the use of this remedial agent in the treatment of scrofulous affections. There is a notice of it by him in the Medical Communications for the year 1789. He remarked that it combined the action of an evacuant, a deobstruant, and a tonic; that its incautious use was likely to be attended with a host of unpleasant and even dangerous symptoms, as loss of appetite, thirst, nausea, constipation, deafness, loss of sight, and paralysis of the voluntary muscles; to obviate this, he advises the use of a saturated solution, gradually increased from four to ten drops, as a dose.]

He dissolved half a drachm in an ounce of distilled water, and gave from ten to fifty drops, according to age—that is, roughly from half a grain to three grains of the solid muriate. When he administered it to infants, he added a syrup to diminish its irritant effects; when the stomach was affected with spasm, he combined it with some aromatic or anti-spasmodic; he mentions that its activity in certain diseases of the skin is much increased by the addition of emetic wine, Plummer's pill, and cicuta. In very delicate subjects, he exhibited it according to the following formula:—

Muriate of barytes.	} of each half a drachm.
Muriate of iron,	
Water distilled,	} of each an ounce.
Syrup of orange peel,	

The dose of which is from twenty to thirty drops every three hours. Dr. Crawford has also recommended its conjunction with iron; indeed, the solution of barytes, which he used in his first experiments, contained a minute proportion of iron.

The French physicians usually recommend a drachm of the salt to be dissolved in two pints of distilled water, of this a tea-spoonful, that is about half a grain of the barytes is taken in a tea-cupful of infusion of hops, or some other bitter, every morning, fasting; this dose is gradually increased, its effect being watched with great care.

The form in which I have usually exhibited it varies from that heretofore followed in being in pill. I at first exhibited it in this manner to avoid as much as possible the too speedy decomposition of the medicine in the stomach, and at the same time to prevent its being so rapidly absorbed as it would be in a fluid state. I have always commenced with very small quantities, one-twelfth of a grain three times a day, gradually increasing the frequency of the doses, rather than the quantity in each. I think it desirable that it should be taken after meals, so as to defend the stomach from its rapid action. With these precautions, though I must confess it was with some anxiety that I awaited its effects the first time, I have never experienced any inconvenience in its exhibition.

[In that form of ophthalmia attended with great intolerance of light, so characteristic of the scrofulous form of this disease, Dr. Walshe has observed it very useful. He says, however,]

I do not wish it to be understood as my opinion that muriate of barytes should supersede iodine in the treatment of scrofulous diseases, in which we frequently derive such eminent services from the latter, but I think I am warranted in inferring, after a careful examination of these cases, that there are some cases of scrofulous disease, in which iodine is useless, or may be worse than useless, and when we may derive considerable service from the muriate of barytes; and further, that there are some cases in which we experience beneficial results from iodine up to a certain point, beyond which, if it be persisted in, its beneficial action ceases, and it proves noxious. In these cases the treatment may be advantageously taken up with the barytes, and *vice versa*.

Dublin Medical Press, Feb. 18, 1846, *p.* 100.

89.—*Topical employment of Cod-liver Oil, in the Treatment of certain Strumous Affections.*—By Dr. Brefeld.—In cases of tumefaction of the lymphatic glands of the neck, axilla, and groin, this physician prescribes, with success, the employment of cod-liver oil in frictions to the inflamed and painful parts. He says that he has observed that this topical medication becomes useless, when it is used with tumours which are the consequence of variola, scarlatina, or rubeola.

In the case of scrofulous ulcers, consecutive to inflammation and suppuration of the lymphatic ganglions, he employs the following ointment:—

Oil of cod-livers, 15 parts.
Liq. of subacet. of lead, 8 parts.
Yolk of egg, 12 parts.
Make into a homogenous ointment.

We can, in the preparation of this ointment, replace the yolk of egg by an equal quantity of lard. This ointment may be applied to the ulcers, lightly, by means of a feather.

In scrofulous ophthalmia, M. Brefeld smears, twice or three times a day, the margins of the eyelids, with pure cod-liver oil, which he applies by means of a camel's hair brush, or a feather.

In scrofulous peritonitis, this practitioner rubs the cod-liver oil on the surface of the abdomen; and when the latter is painful, he recommends to warm the oil.—*Journal de Pharmacie*, April, 1845.

Dublin Hospital Gazette, Nov. 15, 1845, *p.* 107.

90.—*Bromine and its Preparations.*—The very high price which iodine has attained within the last twelve months, has rendered it very desirable that a substitute should, if possible, be obtained for this medicine, which is at present so extensively employed. Bromine and its preparations have been shown by the experiments of Majendie, Barthez, Brame, and others, to possess therapeutical properties as nearly as possible identical with those of iodine and the iodides. The scarcity, however, of bromine, and, consequently, its commercial value, has hitherto prevented its general employment as a remedial agent; but the recent discovery of it in large quantities in America has recalled attention to this substance as a substitute for iodine. Mr. O'Reilly, of this city, while lately in the neighbourhood of New York, having had his attention called to the peculiar properties of the mother waters of many brine springs in the United States – the result of their evaporation for procuring common salt, found by experiment that they contained bromine in large quantities—nine drachms in every gallon. Having procured a large amount of bromine from this source, he has brought a hundred pounds weight of it home, and states that he can obtain an almost unlimited supply of it; the price at which it is now sold in Dublin is eighteen pence an ounce, while the present price of iodine is three shillings and sixpence an ounce. These circumstances have induced us to include in our retrospect a short account of the doses and mode of administration of bromine, and its preparations.

The forms in which it has been used on the continent are, in the simple state much diluted, and combined in the form of bromides with potassium, barium, calcium, iron, and mercury. These preparations are made by processes exactly similar to those used for procuring the corresponding combinations of iodine. As a substitute for the tincture of iodine, M. Pourche has employed the following solution: bromine, one part; distilled water, forty parts; dose, from five to six drops in some aqueous vehicle, three or four times daily. For external use he employs a solution four times as strong as this. The *bromide of potassium* is very soluble in water, sparingly soluble in alcohol: the dose of it is from four to eight grains three times a day: to prepare an ointment from it, four parts are rubbed up with thirty-two parts of lard; and if

stronger ointment, or one resembling the compound iodine ointment, be wished for, six drops of bromide are added to this. The *bromide of barium* is also soluble in water; the dose of it is from one to five grains three times a day; the ointment is prepared by combining it in the proportion of one part to ten of lard. The *bromide of calcium* is prescribed in the form of pill made with the conserve of roses; the dose of it is from three to ten grains. The *bromide of iron* is a brick-red deliquescent salt, very soluble in water; it is not so easily decomposed as the iodide of iron, and is given usually in the form of pill, made with conserve of roses and gum arabic; the dose of it is from one to three grains: it has been employed externally also in the form of ointment, prepared with one part of the bromide to fifteen of lard. Two *bromides of mercury* have been used: the first, a sub-bromide, is a white insoluble powder: the dose of it is one to two grains daily: the second, a bromide, is fusible and volatile, and soluble both in water and alcohol: its dose is one-sixteenth of a grain, gradually increased to one-fourth of a grain, daily. All the preparations of bromine may be readily known from those of iodine by their not disengaging violet-coloured vapours when concentrated sulphuric acid is poured on them.

In France, bromide of potassium has been of late fraudulently sold for iodide of potassium, in consequence of the high price of the latter; a sophistication of but little importance, if, as we are inclined to believe, the medicinal action of both be identical.

Dublin Quarterly Journal of Medical Science, May, 1846, *p.* 533.

91.—*On the Physiological Effects of Digitaline.*—By MM. Bouchardat and Sandras.—[The active principle of digitalis, the action of which is described below, has lately been isolated by M. Homolle.]

MM. Bouchardat and Sandras have also instituted a number of experiments on digitaline, and it results from these experiments, they observe, that digitaline is an *excessively active substance*, especially when it is pure. It acts with violence, not only when it is injected directly into the veins, but also when it is taken into the stomach. It singularly modifies the circulation, and is capable of irritating the digestive organs in a high degree when it is applied to them. These experiments, then, having sufficiently enlightened us as to the energy of the principle extracted from the leaves of the digitalis purpurea, we were next desirous to ascertain the results that might be expected from so powerful a remedy when given in proper doses. It was, above all, important to obtain a correct knowledge of the action of this poison on the circulation, at the same time avoiding to excite the irritation which it is able to cause in the digestive apparatus. With this object in view we prepared pills, containing a tenth of a grain of digitaline, by means of mucilage and marshmallow powder. We exhibited these pills to patients in whom a greater slowness of circulation might be useful, and whose state did not allow us to fear any injurious results from the

use of an agent capable of irritating the digestive canal. In these conditions we have observed important modifications of the circulation. All our patients had a marked slowness of pulse. It was felt before the experiments were commenced, it was felt again five or six hours after the administration of one of the digitaline pills; and again the next morning. We found that the greatest depression of the pulse took place in general some hours after the exhibition of the medicine. It was then found in several instances to be diminished in frequency to the extent of nearly one-half the normal condition; it was however, very often only one-third or one-fourth. The next morning it became rather more frequent, but it always remained from ten to more beats below the normal pulse. For example: in a young epileptic girl, whose pulse, habitually unequal, varied from 80 to 120, we have frequently found it only 50 in the minute under the influence of digitaline. A man, fifty years of age, who had been several times the subject of apoplexy, and whose pulse was never higher than 48, several times had it reduced to 36. A woman, fifty years of age, phthisical to the last degree, and often troubled with hæmoptysis, with a pulse generally from 120 to 131, has had it fall to 96 or 94. A woman, in whom we were desirous to increase the urinary secretion, had the pulse reduced for several days from 120 to 128 beats to 92, 88, or 85. In all these cases we found that the action of digitaline on the circulation was shown not only by a diminution of the frequency of the pulse, but also by its irregularity. This irregularity appeared to us to be of two kinds; the interval of the pulsations was unequal: this was the most remarkable irregularity; else the character of the pulse was altogether different, the pulsation being one while hard and very quick, at another hard and prolonged; it is sometimes soft at intervals, else it continually preserves that character. Almost all the cases which we have noticed have shown analogous results.

Only one of our patients mentioned any modification in the urinary secretion, and we were not able to attribute that fact to any other appreciable cause than the exhibition of the medicine. But, besides this physiological phenomenon, there were others, of which it is important to take notice. Several patients have complained of disorders of the senses, light-headedness, annoying dreams, and hallucinations. These phenomena always occur at the commencement of the toxic effects of digitaline. They were soon followed by more or less frequently repeated diarrhœa or bilious vomiting. When this has occurred, we have, of course, always stopped the use of the medicine; but, in spite of all the precautions which could be adopted, the vomiting sometimes lasted for two or three days. The appetite was lost at the same time, and quietude and time were required to re-establish the digestive functions. The toxic effects of the digitaline were not generally produced at first; for the first two or three days it seemed as if the patient had not taken any thing out of the way, but suddenly, and without any previous warning, the effects of the ingested substance began to show themselves. The slowness of the pulse became then

most marked. If its use be continued, the pulse becomes yet slower under its influence, but at the end of some hours it again becomes frequent, doubtlessly induced by the irritation of the digestive organs, which this singular body does not fail to produce.

En resumé, digitaline is one of the most active vegetable substances we are acquainted with. The attentive and sustained study of its effects on the circulation might furnish some useful indications for practice; but at present we believe it to be our duty rigorously to declare that it is an agent of exceeding energy, the action of which must be attentively supervised, its sudden toxic power being especially to be feared, notwithstanding the security in which the medical attendant is left for several days. Digitaline possesses exactly all the active properties of digitalis; this new substance may, therefore, be of service in all those diseases where digitalis has been employed with success, and the medical man may always know correctly the quantity of the active principle which he employs.

4th. Dose and mode of administration of digitaline.—The dose and mode of administration of this most energetic agent require the greatest circumspection. MM. Homolle and Quevenne from comparative essays have found that four milligrammes of digitaline correspond, in regard to energy of action, to about eight grains of the powder of digitalis purpurea, prepared with the greatest care, and taken in a state of purity.

5th. Pharmaceutical preparations—MM. Homolle and Quevenne recommend the following preparations as the most convenient forms for administering digitaline:—

a. Granules of digitaline.—One gramme of digitaline, 50 grammes of white sugar, for a thousand granules, which are to be prepared in the same manner as the aniseed of Verdun. These granules, containing each a milligramme (one-fiftieth of a grain) of digitaline, may be exhibited in the dose of from four to six in the course of the twenty-four hours.

b. Syrup of digitaline.—Two grains of digitaline, 1500 grammes of simple syrup. The digitaline is to be dissolved in alcohol, and then added to the syrup. This syrup contains one milligramme of digitaline in every fifteen grammes of syrup. Dose from four to six spoonfuls in the course of the day, pure, or in a glassful of an appropriate infusion.

c. Digitaline mixture.—Five milligrammes of digitaline, 100 grammes of distilled lettuce water, twenty-five grammes of syrup of orange flowers. Dissolve the digitaline in a few drops of alcohol, and add the distilled water and the syrup. To be taken by spoonfuls in the four and-twenty hours.—*Pharm. Medical Times*, April 1845.

Dublin Hospital Gazette, Nov. 15, 1845, p. 110.

92.—*Stramonium Cigars.*—Stramonium has for a long time been recommended as a remedy for asthma and other disorders of the chest, and it is frequently used in a pipe with a portion of tobacco.

Mr. Butler, of Covent Garden, has recently introduced cigars composed of the leaves of this plant, and we have been informed by several patients who have tried them, that the plan is more convenient than the one formerly adopted, and that the remedy is quite as efficacious, if not more so. A short time ago, a caution was issued to chemists, to the effect that these cigars could not legally be sold without a cigar license, and on this account we have deferred our notice of them. But we are now informed that this objection is overruled, it being decided that the stramonium cigars may be sold without a license as a remedy, as no tobacco enters into the composition.

In France, not only stramonium but several other medicinal plants are used in the form of cigars; and we have been informed that advantage has been found to result from the practice in some cases.—*Phar. Jour.*

Dublin Medical Press, April 29, 1846, *p.* 264.

93.—*Tinctura Ricini.*—The following conclusions have been arrived at by M. Parola, from experiments performed upon himself and others, with some new preparations of the ricinus communis:

1. That the purgative action of the ethereal and alcoholic tinctures of the seeds is four times more powerful than that of the oil obtained by expression, and that these tinctures are neither more emetic nor more irritant than the castor oil itself.

2. That these new preparations retain their properties unaltered for a very long time, whatever may be the climate or season.

3. That the purgative qualities of the ethero-alcoholic extract are comparatively less than those of the lees or pulp, from which it is obtained, showing that this pulp contains yet another principle, insoluble both in alcohol and ether.

4. The advantage possessed by these new medicines, of not being emetic, is easily explicable, as from not requiring to be taken in large quantity, they do not overcharge the stomach, nor excite it to contract for their expulsion.

New Mode of Administering Castor Oil.— The following method of administering castor oil is proposed by M. Righini, as being less difficult and disagreeable than when the oil is taken in the ordinary way, without diminishing its purgative properties:—Take of gum arabic in very fine powder, eight grammes; pure water, one hundred grammes. Make a mucilage with a little of the water, and then add of very pure castor oil, thirty grammes. Mix well, and dilute the mixture with the rest of the water. The filtered juice of an orange, and syrup of sugar, thirty grammes, are then to be added, shaking the whole well together.—*Journ. de Chimie Medic.*

Provincial Medical and Surgical Journal, April 1, 1846, *p.* 150.

94.—*Mode of taking Castor Oil*—[The following method of taking this aperient medicine is recommended by Dr. Wansborough, of Chelsea.]

Wet the inside of a wine glass, and the *edge* particularly. To a teaspoonful or two of brandy, add five or six drops of lemon-juice and half an ounce, or a little more, of cold water; upon this, in the centre of the fluid, pour the requisite quantity of oil; desire the patient to open wide the mouth, and *throw* it down the throat. The flavour of spirit and acid remain on the tongue, and the oil is *not tasted*. Should the patient be of a nervous temperament, the practitioner must perform the act, which, simple as it may seem, requires a certain degree of adroitness and tact, to pass the fluid at *once* into the pharynx, avoiding the glottis, or it will not effectually answer the intended purpose.

Medical Times, Feb. 28, 1846, *p.* 442.

95.—*A method of making the Protoiodide of Iron.*—By M. Kop. —It is known that the protoiodide of iron, prepared in the usual way, cannot be obtained solid in a state of purity. The limpid and colourless solution first formed, acquires a portion of oxygen from the air, and a part of the iron is thus oxidised, while, at the same time, a portion of biniodide of iron is formed, so that the product consists of a mixture of iodide and biniodide of iron, with peroxide of iron. If this mixture be dissolved in water, the solution will be of a yellowish red colour, more or less deep, according to the quantity of biniodide, or even of free iodine present; the solution will also be turbid on account of the peroxide of iron held in suspension.

The author recommends the following method of preparing pure iodide of iron:—Triturate four parts of iodide with two parts water in a large dish; then add, at once, one part of iron filings in a state of fine division, and continue the trituration. In a few moments there will be manifested a considerable elevation of temperature, together with the disengagement of the vapour of iodine. Sometimes, especially if the temperature of the atmosphere be low, the heat developed from the mixture is insufficient to cause the disengagement of iodine vapour; but, in this case, it is only necessary slightly to heat the mixture, immediately after the addition of the iron filings. The mixture is at first liquid, but it soon becomes solid.

There exists, in the protoiodide of iron thus prepared a small quantity of iron, which may be easily separated by a filter, when the salt is used in solution, and the filtered liquor will then be colourless, and free from the mixture of biniodide, or of free iodine.

This preparation may be easily administered in the form of pills made with any proper excipient.—*Chemist, Schmid'ts Jahrbuch,* and *Journal de Chemie et Medicine.*

Medical Times, (*Pharmaceutical No.*) *Feb.* 1846, *p.* 21.

SURGERY.

FRACTURES AND DISEASES OF BONE.

96.—TREATMENT OF FRACTURES.

By William Kerr, Esq., Glasgow.

[In the November number of the *Northern Journal* was an interesting article on the use of splints of a novel description, by Mr. Kerr, to which we can now only refer the reader, not having the engravings ready to illustrate their description. They appear remarkably well adapted to keep the limbs in secure positions, even allowing considerable latitude to the patient in his movements: in another paper of Mr. Kerr's, he says:]

Since the publication of my paper descriptive of a new species of splints for fractures, additional evidence has occurred of their utility, and I have been thereby led to make some improvements on their construction. Those who have read that paper may possibly recollect that the apparatus for fractures of the thigh was the least tried of all the contrivances, having been employed in only one case, and that a boy, so that it was then wholly untried in adults.

[This boy's case turned out so well that Mr. Kerr determined on using the splint in the treatment of the next case of fractured femur in the adult, which might occur to him. This happened soon after; a gentleman, forty years of age, fell and fractured his thigh a little beneath its middle. Mr. Kerr adds:]

My apparatus was put on. Neither inflammation, fever, nor any unpleasant symptom followed; on the contrary, his appetite was all along excellent; the pain began to abate from the time the thigh was properly secured in splints, and the swelling to diminish from the fourth day. From the second day, he was able to shift from one side of the bed to the other, with very little assistance besides that of cords tied to the roof of his bed. From the sixth day, he sat for a few minutes daily on the edge of his bed, his feet resting on a stool on the floor. On the fourteenth day, he stood on one foot, with the support of two persons, till a

clean sheet could be put on his bed. As long as he stood, one of his assistants bore up the weight of the splints. On the twenty-first day, the union of the bone appearing to be pretty firm, the bandages round the thigh and leg splints of the apparatus were taken off; and on the twenty-fourth day, the whole apparatus was removed, and the limb left bare. Not the slightest overlapping or bend of the bone, and, consequently, not the slightest shortening of the limb could be discovered.

[Mr. Kerr's patient was able to move from one side of the bed to the other, and even to stand without displacing the fractured bones, so that what was said by Mr. John Bell, in his Principles of Surgery, cannot now be assserted, viz. that there is no machine invented yet by which a fractured thigh-bone can be perfectly secured. Mr. Kerr has made several improvements in his fracture apparatus, which he describes in his paper, from which we have taken the foregoing extract. The application of his apparatus to cases of hip joint disease, we think may be a most important improvement in surgery. On this subject he says:]

Before concluding, I have only to repeat more emphatically, if possible, than in my first paper, the great benefit and relief given by my splint in disease of the hip-joint. If suppuration has not formed, a cure may very probably be effected by wearing a splint, aided by warm clothing, moderate exercise in the open air, a nutritious diet, and often wine and tonics. If suppuration has occurred, great relief may still be given by the above-named means, but the prognosis is much more doubtful. The younger the patient, the more readily does suppuration occur. It may appear presumptuous to oppose the ordinary and long established practice of issues, blisters and bleeding. I have formed my opinion upon the testimony of patients, or their guardians, who consulted me, and and in every case of diseased hip-joint, where these measures had been adopted, aggravation of the complaint and of the sufferings of the patient had evidently been the result. I likewise found that the parties had previously arrived at the same conclusion with myself. I cordially agree with Mr. Coulson's condemnation of issues, in his excellent work on Disease of the Hip-Joint, and merely wish that he had extended his condemnation farther. The immediate relief from pain, which I have repeatedly witnessed by the application of a proper splint, decidedly proves that the sufferings of the patient are owing to the friction of a diseased head of the bone on a diseased socket. What then can be gained by issues, blisters, and bleeding, while no efficient plan is pursued to prevent motion? If my statement is true, that a splint does relieve the pain, and gives almost perfect ease to a patient, who, for weeks previously, had spent his days and nights in agony, what need is there for counter irritants? It will be said, that they are intended to remove the disease, which causes motion to be painful. Here I appeal to the experience of patients themselves. Often have I been told by a patient, "I was only slightly lame till I applied

blisters and issues, but I have since got much worse, and been scarcely able to be out of my bed;" or watchful and intelligent parents have said to me, "We were directed to apply a blister, and this doing no good, an issue was next prescribed, but since these remedies were resorted to, the pain, which was trifling, has become agonizing."

Northern Journal of Medicine, Feb., 1846, *p.* 76.

97.—*On Fractures and Dislocations.*—By G. O. Jarvis, M.D., Connecticut, United States.—[Dr. Jarvis, in a course of lectures delivered at the Royal Westminster Ophthalmic Hospital, on Fractures and Dislocations, in alluding to the mechanical principles to be adapted in their treatment. He exhibited a peculiar instrument intended to fulfil the following indications:]

1. To establish a line of extension between an y two given points of the body.

2. To furnish an extending force which is unlimited in principle, yet easily calculated, and which is perfectly subject to the will of the operator.

3. To be able to combine with the simple extending force a lever of the first or second order, according to the exigency of the case, to act transversely to the line of extension, yet, without in any way interfering with it, subject, in like manner, to the will of the operator.

4. To fulfil all these indications without in any way interfering with the mobility of the limb.

5. To enable the operator to apply the force, whether direct or transverse, either rapidly or slowly, and to retain it on the limb during his pleasure.

These indications may be fulfilled in the following manner:—A brass box or case contains a rack-bar and a pinion-wheel within the case, the teeth of which match into those of the rack-bar, the pinion-wheel within being at one end of the brass case; the brass case is about thirteen inches long, and is divided in the centre lengthwise, so as to form two ways, one for the rack-bar, which is always the extending bar, and the other for the counter-extending bar, which may be drawn out and fastened by a small screw, at any desirable point. On the surface of the brass case, and on the same shaft with the pinion-wheel, is a ratchet-wheel, with a catch, corresponding to the teeth of the ratchet wheel; the shaft of these wheels terminating in a square heel, to which the lever is applied. On the end of the counter-extending bar is received, according to the case to be treated, one of the four forks, the thigh fork, the shoulder fork, the jointed fork, or the elbow fork; these are each received on the end of the counter-extending bar by their sockets, and each in its turn, according to the case to be treated, is used as the counter-extending point of the instrument; while the end of the rack-bar, which is turned at a right-angle with the part which is received into the case, is always the extending point of the instrument. There is also a side lever, which is used to apply

force transversely to the line of extension, as in dislocations of the hip; the socket is slipped on the end of the brass case, and when the thigh-fork is received by its socket on the end of the counter-extending bar, the plate passes between the thigh-fork and the roll, hanging loosely between the arms of the fork. To these belong several belts, straps, &c. which are for taking hold of the limb, securing the instrument, &c.; which you will readily understand in applying the instrument,—since the requisite instructions are always furnished by the manufacturers, Mr. Weiss and Son, No. 62, Strand, London.

Lancet, Jan. 10, 1846, *p.* 29.

[Dr. Jarvis lays down four principal rules, which he regards as essential in the treatment of all fractures, by his apparatus.]

1st.—So place the limb as that the fractured portions shall be inclined the nearest to a normal line of that bone, which can be effected by the action of these agents.

2nd.—So apply extension and counter-extension as that the smallest amount capable of preserving coaptation shall be employed.

3rd.—So apply force as that the line of extension shall operate the nearest possible to a perfectly normal line of the fractured bone.

4th.—Let the points of extension and counter-extension be confined within the limits of the fractured bone.

If, in our treatment, we succeed in applying efficiently these four rules in practice, it is conceived that we then have the laws of mechanics conformed effectually to the principles of surgery, in the treatment of fractures; if not, we fail in our object.

[In a recent visit to Paris, Dr. Jarvis was somewhat surprised to find that exactly the same principle of treating fractures as his own, was adopted in the Val de Grace, a military hospital. It was, however, attended with some inconveniences, and not always resorted to. Dr. Jarvis's contrivances are certainly very ingenious, and must be effectual. We suspect, however, that they will not be brought into general use in this country, as simpler and much less costly apparatus are very efficacious in the treatment of fractures.]

Lancet, Jan. 17, 1846, *p.* 59.

98.—*On the Treatment of Fractures of the Thigh Bone.*—By Joseph Maclise, Esq.—[In the treatment of fracture of the femur, where the primary object is to extend and counter extend, Desault's splint is generally made use of. When position is of the greatest importance, the double inclined plane or Mc. Intyre's machine is preferred. Any instrument which would combine these two advantages will be a desideratum in the treatment of fracture of the thigh bone. Mr. Maclise has contrived an apparatus by which he proposes to do this. He gives three plans of apparatus; the third combines the principles of the two first.]

Plan the first, explanatory of the principle of Desault's apparatus.—After having ascertained the condition of those structures concerned in fracture of the thigh-bone at its upper third—namely, that the upper fragment of the bone, obeying the traction of those muscles which are inserted into the lesser trochanter, assumes a new position, and points towards the fore part of the limb, making its line of axis to form a more or less acute angle with that of the lower fragment, which latter lies horizontal, and coincides with the level of the body, stretched supine—we must view Desault's long splint applied, and take account of the principle of its application, which is, the maintenance of extension and counter-extension, upon which we discover the condition of the fractured bone to be as follows, viz.:—That the lower fragment of the femur is borne in the horizontal line of axis of the long splint; and however great may be the extension and counter-extension made in this direction, still it does not agree with the line of axis of the upper fragment, nor does it affect this latter. The distal extremity of the upper fragment may be felt at the fore part of the thigh, whilst the proximal end of the lower fragment is buried deeply in the centre of the soft structures.

Plan the second, expressive of the principle of the double-inclined plane.—When this apparatus is applied, it may be seen to support the lower fragment in the line of axis assumed by the upper end of the femur, but owing to the want of some power whereby the limb may be extended or counter extended, the broken ends of the bone may be ascertained to have slipped aside of each other; hence there is shortening of the limb. The want of crepitus is proof that the fractured ends of the femur are not in apposition.

Plan the third, an apparatus which combines the principles of both the above.—The long splint of Desault may be passed through apertures cut in the outer side of the oblique boards of the double-inclined plane, upon which latter the fractured limb is to be supported, whilst, at the same time, the necessary degree of extension and counter-extension may be made as usual by means of the former; a stocking or hose may be applied so as to invest the sound limb as far up as the groin, and having connected to it, before and behind, two straps, with which the counter-extension is to be made in place of the perineal band.

In consequence of the continued pressure of the perineal band upon the locality of the groin, excoriation and (in weak constitutions) very severe sloughing are produced; whereas, by making the counter-extension from this canvas envelope of the opposite limb, not only is this extreme annoyance prevented, but a pressure of tenfold force may be made, if required; all the amount of pressure would be thus diffused.

Lancet, Jan. 17, 1846, *p.* 68.

99.—*Fractured Ribs Treated by Strips of Plaster.*—By Dr. HANNAY.—[Every surgeon is aware of the utility of a tight bandage round the chest to take off the action of the intercostal

muscles when the ribs are fractured. The material most commonly used, as cotton linen or flannel, relaxes after it is applied and thus becomes useless. Dr. H. recommends the application of strips of adhesive plaster around the chest. He says:]

The following is the mode of applying them:—I cut the most adhesive and best made diachylon plaster I can procure into strips four inches and a half broad, and of sufficient length to surround the thorax with a tail, which, after meeting around that cavity, will reach fully a foot beyond the point of meeting. I place the patient in a warm apartment, and close to a good warm fire, so that the plaster may be readily and thoroughly warmed, and kept perfectly soft during the application of it. Having ascertained the seat of the fracture, and having the plaster thoroughly softened, I place the middle (the sailor would call it the bight) of the strap on the fractured points. An assistant and myself each pull the ends of the strap very tightly, whilst another assistant supports the patient by preventing him from yielding in the direction we are drawing the plaster. The patient also empties his chest by expiration as forcibly as he can, at which conjunction the strap is brought in contact with, and made to adhere to the chest, encircling it tightly all round; the ends are crossed over each other. This first strap, or girdle, is followed by a succession of them, laid partly over each other, or imbricated: each strap should cover a third of the width of the one next it: they are applied in the same manner as the first, which, in the end (from the straps reaching up to the axilla, and down to the lower part of the chest, compressing that cavity powerfully), becomes slack, and another one is required to be put round over it. I then, to secure the firm and complete adhesion of this cuirass of plaster at every point, smooth it over with an Italian iron sufficiently, but moderately heated.

Medical Gazette, Nov. 21, 1845, *p.* 1283.

100.—*On Abscess of the Tibia.*—By Sir B. C. Brodie, Bart.—[After alluding to organization of bone and its liability, the same as other tissues, to diseased action, and remarking upon the peculiarity of the symptoms in consequence of the presence of phosphate of lime, Sir Benjamin asks, what symptoms lead us to suspect the existence of abscess in the tibia, and what can be done for its relief? He replies thus:]

When the tibia is enlarged from a deposit of bone externally—when there is excessive pain, such as may be supposed to depend on extreme tension, the pain being aggravated at intervals, and these symptoms continue and become aggravated, not yielding to medicines or other treatment that may be had recourse to—then you may reasonably suspect the existence of abscess in the centre of the bone. You are not to suppose that there is no abscess because the pain is not constant; on the contrary, it very often comes on only at intervals, and in one of the cases which I have related there was, as I then mentioned, an actual intermission of

seven or eight months. After the disease has existed a certain number of years, indeed, the pain never entirely subsides, but still it varies, and there are periods of abatement and of exacerbation. The combination of circumstances which I have described will fully justify you in making an opening into the bone with a trephine. But how will it be if you are mistaken? This will not often occur, but if it should, really the taking out a circle of bone can be of no consequence; no injury follows the operation; it is unattended with danger. The operation is a very simple one. You expose the surface of the bone, and make a circular opening with a trephine at that part where there seems to be some tenderness and some pain on pressure. One principal thing to be attended to is that you have a proper trephine. You do not want so large an one as for the cranium, and it must be somewhat differently constructed. Those which lie on the table are made for the purpose. One is of very small diameter, but generally it is quite sufficient. The common trephines are made with a rim or shoulder, and if there be much enlargement of the bone, they will not penetrate deep enough to reach the abscess. It is true that you may break away the bone afterwards, by means of a chisel, but the operation may be more easily performed with a trephine having no shoulder; which will at once penetrate to the abscess, however deep it may be, and render the chisel unnecessary. The after-treatment is as simple as possible. There may be some pain for a day or two, and especially, as in the case I last mentioned, if the patient be an hysterical female, there may be hysterical pain afterwards; but all that is required is to maintain the general health, and lay on some simple dressing: the bone soon granulates, the space is filled up by a sort of fibrous substance, and the wound cicatrises.

The last three cases show that it is not safe to leave an abscess in the lower end of the extremity of the tibia beyond a certain time; that the joint is always in danger, and that the perforation of the bone is the only remedy. Even if you were mistaken in your diagnosis no harm can arise from the operation. Nay, it is a question whether good may not arise under such circumstances from taking away a piece of bone, where there is chronic inflammation in it, even though there is no abscess. The following very remarkable case will illustrate this observation:—A young gentleman, who lived at Brixton, was brought to me by Mr. Crowdy, a practitioner of that place, with violent pain in the middle of one arm, the bone itself being enlarged in that part to which the pain was referred. Some remedies were tried, which I need not enumerate, without any benefit. The pain continued, and I began to suspect that there might be an abscess in the centre of the bone. Under this impression I proposed cutting down upon it, and making an opening with the trephine, so that I might remove the matter, if there were any there. The operation was performed; the trephine penetrated to the centre of the bone, but no matter escaped. I persevered, but still there was no matter, and at last the instrument penetrated completely from one side of the bone to the other.

The bone was very hard and compact, and it was as much as the trephine would do to run it through. I thought that I had made a blunder, and that there being no abscess the operation would not be attended with any benefit. The next morning the patient had an attack of pain almost as severe as before the operation, but it did not last long, and he had never any pain afterwards. The wound healed, the relief was complete, and I heard of the patient not long ago as having continued quite well. I presume that this was a case of chronic inflammation of the humerus, and that taking out the piece of bone from the centre, probably partly by relieving the tension, and partly by a discharge of matter from the bone, unloading the vessels, accounted for the relief which the patient obtained from the operation.

Medical Gazette, Dec. 12, 1845, *p.* 1399.

101.—*Osteitis of Tibia, Periostitis, Treatment of by Iodide of Potassium.—Cure.*—[A female servant, twenty-one years of age, was admitted into the Dublin Hospital with the anterior and upper portion of the tibia red, swollen, and painful, particularly to the touch; the countenance indicative of great distress; she had four grains of iodide of potassium three times a day, gradually increased to fifteen grains, after her food. The pain subsided, and on the sixth night after admission, she slept well. The periosteal enlargements were decreased in size, and her general health improved. She had then half a drachm three times a day, which was subsequently increased to two scruples.

Dr. O'Ferrall, under whose care she had been is much in favour of the iodide of potassium in the treatment of periostitis; in this instance, which was so successful in its result, there was inflammatory expansion of the upper part of the tibia, which occasionally ends in the formation of pus. Dr. O'Ferrall observes that]

It cannot be too often insisted on, that, in these cases, high doses of the mineral are often required for the cure; and that the proper time for its exhibition is, after food.

Dublin Hospital Gazette, Nov. 1, 1845, *p.* 85.

102.—*On the different kinds of Starch Bandages, with an improved modification.*—By J. C. CHRISTOPHERS, Esq., &c.—[During the last nine or ten years, the starch bandage has engaged general attention. In 1837, it was generally used in Paris, and throughout Belgium. Its utility, however, has of late been much more marked.]

M. Velpeau was the first to propose a modification of M. Seutin's method, which appeared under the title of "Note sur un nouveau perfectionnement de l'appareil inamovible," from which it appears that M. Velpeau had for some months substituted dextrine for starch, which he used as follows:—Take a quantity of dextrine and put it in a vessel, and begin to mix it by adding a small quantity of water very gradually: when it is well mixed, add to it a glassful of brandy, simple or camphorated. One or more unrolled

bandages are put into this mixture, and are then applied. The advantages M. Velpeau attaches to the use of dextrine are the following: 1st, that it hardens very slowly, and admits of being altered or adjusted during twenty-four or forty-eight hours after its application, in the same way as a cylinder of soft wax; 2nd, the advantage it has over starch is due to the circumstance, that the starch has to be boiled, and that it is almost indispensable to use it warm; that it must be smeared over the bandage either with the hand or a brush: further, it is difficult to starch the bandage efficiently after it is applied, as certain portions of the bandage must then be left unstarched.

The modification of M. Laugier is very ingenious; it consists in using strips of paper, smeared over with starch, in the place of a bandage, which, when applied, form a kind of pasteboard mould, consisting of one piece. The paper is cut into strips, according to the length and circumference of the limb, varying from an inch and a half to two inches in breadth, and from sixteen to twenty-two inches in length; and a number of the longer strips are also used starched together in a longitudinal direction, to add to the strength of the apparatus, forming, as it were, so many long splints, in imitation of the pasteboard ones used by M. Seutin. The advantages of this modification are the following:—the small cost of the material, the ease with which it can be at all times procured; the solid envelope it forms, composed of a single piece, moulded exactly to the limb, accommodating itself precisely to every irregularity on its surface, combining solidity and tightness with moderate thickness, and allowing the patient to move in bed to employ himself, and speedily to walk. The objections to it are, that it does not exercise sufficient resistance; that it is easily torn in the neighbourhood of the articulations; that the patient is not able to walk so soon as with the starch apparatus, probably because it is not sufficiently solid; that if it be lighter it acquires this quality at the expense of strength; that it is more costly than starch, as it requires frequent removing, and a paper specially made; that it is difficult to apply, and does not always exercise the amount of compression required; and that it wants elasticity.

The modification of M. Lafargue has for its object the immediate solidification of the apparatus of M. Seutin, for which purpose he employed a mastic, composed of starch and plaster, aided in its action by pieces of wire. To give an idea of his method, I will cite a case of fracture of both bones of the leg in which it was employed; the wire was not used.

The patient being seated on a bed, a bandage, soaked in lotion, was applied from the toes to the instep, with compresses to the leg; a layer of bandage was applied around the leg, and smeared over with a thin coat of the mastic, over which another layer of bandage was placed, and again a layer of plaster. Graduated compresses were applied on each side of the tendo-Achillis, and two splints of pasteboard, previously soaked in water, and smeared with the mastic, were placed on each side of the leg; they were

held in position by two layers of bandage, spread with the composition; lastly, the whole apparatus was smeared over with it. Two hours after application, the mastic was not dry, though it had set, and was therefore inflexible. The same bandage remained till the cure was effected; all went on well, and the patient recovered without deformity. M. Lafargue saw that the pasteboard interfered with the process of drying, and substituted fine threads of wire, which he placed between the layers of bandage. By this method a fracture is instantly and permanently maintained in position, the apparatus being as firm the moment after it is applied as at any subsequent period, the wires being too slight to exercise any painful influence on the skin, and the patient is able to walk with crutches from the moment the apparatus is perfected. The objections urged against this method are—First, the plaster and starch alone do not become firm immediately, though they become so more rapidly than when starch is used alone. Secondly, this effect is only obtained when the wire is used. Thirdly, the wire is not always easy to apply, and may either inefficiently confine the parts or may exercise painful pressure. Fourthly, the plaster and starch make a very disagreeable compound, crumble and strew the bed, and give rise to dust. Fifthly, an assistant is required to mix the mastic as it is used; the moment it is left it is spoiled. Sixthly, this bandage is more expensive than the starch bandage, and the material not so readily met with. Seventhly, it is not so elastic as the starch bandage, whence difficulties arise after setting it. Eighthly, it presents a harsher surface to the skin.

The modification of M. Van Meerbeeck has for its object the rapid desiccation of the starch bandage, and is as follows:—After the fracture is reduced, a bandage is applied over the limb, then two moistened pasteboard splints, without starch, having the form of those devised by M. Seutin, and over them another bandage. The apparatus is then left to become dry, which takes place in a few hours. By this method, a dry pasteboard mould is obtained, which may be strengthened by an addition of the same material, or by bandages smeared with starch, and a permanent and solid bandage is thus quickly obtained. It is thought that the above modification will prove useful in hospital and in civil practice.

The two last modifiers of the starch bandage are MM. King and Christophers; their method was published in the *Medical Gazette*, in February, 1839. In that paper, the authors, after deducing, from the consideration of the circumstances attending the formation of the callus, the superiority of the apparatus of M. Seutin in the treatment of fractures, state that it has one inconvenience, owing to its inability spontaneously to contract or to dilate, according to the condition and variation of volume in the parts it encloses.

[The starch bandage, from pressing equally on every side, fulfils the indications of treatment much better than the ordinary one, but it is open to one objection, viz., that being, when dry, inelastic,

it does not allow of that increase or diminution of the limb, which so often occurs. Dr. King says]

In talking the matter over with Mr. Christophers, who was attending the case with me, it occurred to him that if it could be made so, it would be a considerable improvement; and the means he suggested, which are as simple as ingenious, I immediately adopted.

He proposed applying around the apparatus, slit open, a certain number of elastic straps made of Indian-rubber, with buckles, which admit of their being drawn to the requisite tightness.

They are rather more than an inch wide, and rather longer than is necessary to encompass the limb. Four of these were applied, and converted the apparatus into a case sufficiently elastic to follow changes in the volume of the limb, and yet of sufficient strength to afford the requisite support. It appears to me that Seutin's apparatus thus modified fulfils, as nearly as possible, and much better than any other, all the indications required; and it must be evident, that it will be even a greater boon to the patient affected with a compound fracture than to one whose fracture is simple.

In case the limb undergo a considerable diminution of volume, it will only be necessary to remove a longitudinal strip of the apparatus, instead of opening it by a longitudinal incision; and the strip should of course be removed, or the slit made along that side of the limb on which the nerves and vessels exist, and which can least bear pressure.

We deem it not improbable that the apparatus thus modified will be found useful in the treatment of many diseases where it is essential to keep the parts motionless, without exercising an unyielding resistance or pressure in the least degree unequal. Mr. Christophers proposes to employ it for that troublesome disease, a varicose state of the veins.

To this modification, neither Professor Seutin nor Dr. Pigeolet raise an objection, (at least I have failed to find such in their work) though till lately a very serious one existed, which was due to the fact that common Indian rubber is so affected by temperature, and the animal secretions, that in the one case its elasticity is too much increased, in the other its texture is destroyed. To obviate these inconveniences, I now employ a material that is not affected by temperature, by animal secretion, nor by grease, and the elasticity and resistance of which can be regulated up to the most delicate point. An amount of pressure varying from pounds to ounces, by a simple arrangement, is equally easily obtained. The material I speak of is called "Vulcanized Indian rubber," a patent preparation of Indian rubber combined with sulphur. Either boiling water or grease may be poured over it, without in any way interfering with its properties, nor does it become hard by exposure to cold: this preparation has permitted me to make a further modification in the apparatus. I now propose to slit the plastic bandage

in two, three, or more places, as the case may seem to demand, and instead of applying the Indian-rubber bands, (which, however, answered admirably,) I enclose the whole apparatus, thus slit into two or many strips, in a case or sleeve of the vulcanized Indian-rubber, of a thickness equal to produce the amount of pressure or resistance I wish to maintain. The Indian-rubber case is so constructed, that it may be fitted to the size of any limb by means of a lace, which is arranged to correspond with that portion of the limb along which the principal nerves and vessels pass, so that in cases where pressure cannot be tolerated over their course by decreasing the strength of the lace, which is also formed of vulcanized Indian-rubber, a diminution of pressure is effected through the whole length of the same. The object attained by this modification is, that the pressure produced and the expansion permitted will be equal throughout every part of the apparatus; whereas, when the bands are used, the resistance is greater, and, therefore, the expansion is less, over the identical spots occupied by them than over any other part. It is true I have not seen any inconvenience arise from this circumstance, but the great advantage the vulcanized Indian-rubber sleeve holds over them, and other methods, in addition to the power it possesses of accommodating itself to the changes of volume in the limb, consists in allowing the section of the bandage into one or many parts the moment it is applied in its wet state, thereby putting aside all risk of injury by pressure, should the limb swell before the bandage dries, a process that occupies some hours, its elasticity being sufficient to keep the slit portions of the bandage in intimate contact with the limb during that period. The extension, however, must be kept up till the bandage is dry and hard, a point I have always seen overlooked in applying Scutin's bandage in this country. Where the sleeve I have described is used, this may be accomplished by a long lath splint acting on the principle of Desault's long splint, and retained in the necessary position by a bandage till this takes place.

In cases where the sleeve cannot be procured, the bands answer well, and with a piece of vulcanised Indian-rubber, any person, in a few moments, can make them. The comfort and advantages to be derived from this apparatus must, I am convinced, be felt, or at least seen, to be duly appreciated.

This apparatus would, I think be invaluable in cases of varicose veins, scrofulous joints, and in that kind of sore legs now treated by strapping, as it is easy to remove and to re-apply it uninjured, and the only difficulty would be to protect it from discharge.

Lancet, March 28, 1846, *p.* 354.

DISLOCATIONS AND DISEASES OF JOINTS.

103.—ON VARIOUS DISEASES OF THE KNEE-JOINT.

By Sir B. C. Brodie, Bart., F.R.S., &c.

[This joint is very frequently the seat of disease, and perhaps it is more liable to "*inflammation of its synovial membrane*," than any other. Should the inflammatory action be slight, there is an increased secretion of fluid, and some little increase in vascularity; sometimes, however, it becomes completely injected, and lymph may even be formed on its surface.]

When the disease has been of long duration, a change takes place in the condition of the synovial membrane, quite different from what is ever observed in the serous membranes. It becomes thickened, of a soft pulpy consistence; the inner surface is no longer smooth and uniform, but processes of soft vascular substance project from it, in the manner of fringes, into the cavity of the joint.

In the commencement of this disease the morbid changes are, of course, confined to the synovial membrane; in a more advanced stage these changes extend to the other textures. That portion of the membrane which covers the cartilages, though it resists the disease in the first instance, becomes affected afterwards. The cartilages themselves adhere less closely to the bone than under ordinary circumstances, and by and by they begin to ulcerate; generally on the patella in the first instance, on the femur and tibia afterwards.

The fluid found in the cavity of the joint, when the synovial membrane is inflamed, is serous. In cases of a slight degree of inflammation, it is slightly turbid; in severer cases it is very turbid, with flakes of coagulated lymph floating in it. Under certain circumstances the synovial membrane will secrete, not mere serum, but actual pus. In like manner, serous membranes occasionally secrete pus, though, under ordinary circumstances, they merely secrete serum. The cavity of the knee-joint is then converted into one large abscess; the abscess being bounded in some parts by inflamed synovial membrane, and in others by the bones of the joint. I say by the bones of the joint; for the cartilages, whenever they come in contact with the purulent secretion, become absorbed.

Now let us suppose that there has been inflammation of the synovial membrane, and that it has subsided. In what condition is the joint afterwards? Sometimes the membrane is left thickened, of a gristly texture, and that may happen even where the cartilages and bones have altogether escaped the invasion of the disease. In other cases, the cartilages being absorbed, the cavity of the joint is

completely filled up by the thickened synovial membrane, and the coagulated lymph effused from its surface. These parts all adhere the one to the other, and anchylosis by soft substance, in the first instance, and by bony substance ultimately, is the consequence. However, complete anchylosis does not occur except the cartilages have been completely absorbed. Where the cartilages have been only partially absorbed, a healing process is established. A kind of membrane is formed upon the surface of the bone in the place of the cartilage, and the joint retains its complete mobility.

[Should the whole of the cartillage be destroyed, the joint becomes anchylosed, but if only part of it, the joint retains its mobility.]

The patient very generally lies with the leg bent upon the thigh. It is better that it should not be placed in that position at first, but the patient very often gets it there before you are aware of it; and it is very difficult, when it is once in the bent position, to make it straight again. Now observe what happens: the synovial membrane and the ligaments are all distended, and must be all stretched, to a greater or less extent; and when the cartilages are ulcerated, very often the internal ligaments at one or other of their extremities become separated from the bone. The flexor muscles are constantly pulling at the head of the tibia, and by little and little they draw it backward, until at last it is removed from its proper place, the condyles of the femur projecting in front of the head of the tibia, and the latter being lodged in the ham. There isthen dislocation, sometimes complete, but more frequently incomplete, the head of the tibia being still partially in contact with the articulating surface of the femur. Even so great a change as this may take place without suppuration. I have known many persons recover with this kind of dislocation of the knee, in whom abscess never shewed itself. In fact, abscess is not a very common consequence of inflammation of the synovial membrane of the knee, being for the most part limited to two orders of cases: one, in which it supervenes after a long period, during which the disease has been neglected, the patient walking about and using the limb in spite of great suffering; the other, in which the first access of inflammation has been of more than usual intensity, the disease going on to suppuration in the first instance.

With regard to treatment in all cases of inflammation, and I may add, of other diseases of a joint, the first and most important thing is, to keep the joint in a state of quietude. In an acute attack the patient suffers so much from motion, that you need scarcely give him any injuctions on the subject. This, in fact, is the method that nature adopts for the purpose of informing him that the joint should not be moved. In case of chronic inflammation, also, the pain on motion is often sufficient to produce the same effect; but sometimes it is not, and then you must have recourse to some special means for keeping the joint in a state of repose.

You may bind it up with a great quantity of diachylon plaster, and a roller over it, or with a starch bandage, either of which contrivances will keep the joint quiet, acting as a splint. But there are objections to both these plans, especially the latter.

The best contrivance for keeping the joint quiet is splints, made of thick and stiff leather, macerated in warm water, and allowed to dry on the part. They should be pretty broad splints, one being applied to each side of the joint, nicely adjusted to it, and kept on by a bandage. These splints, when dry, become as hard as a board, but they are easy to be worn, because they exactly fit A row of artificial teeth is made of the hardest material—of ivory or gold; yet it is easy to be borne because it exactly fits. Make equal pressure everywhere; and these splints cannot fail to fit the parts to which they are applied, as they are moulded upon them in the first instance. They give a more complete support than can be obtained in any other way; and they have this advantage, that if the joint should swell, or the splints be uncomfortable, the patient can easily readjust them for himself, making that degree of pressure which is agreeable to his own feelings.

In a more advanced stage of the disease, when the cure is nearly completed, and it is your object to limit the motions of the joint—not because there are any serious symptoms at the time, but lest there should be a recurrence of the inflammation—a bandage, made by Schoolbred, in Jermyn-street, may be applied with advantage. It is composed of spiral wire, enclosed between two pieces of leather, with a stiff piece of leather, of moderate thickness, behind, and laced on one side. The leather behind makes a very excellent splint, and the bandage being elastic, if the knee should swell a little, it does not matter; besides which, the patient may draw the lace as tight or as loose as he pleases. In many cases, after inflammation of the synovial membrane has subsided, and when the patient first begins to get about, it is advisable to let him be provided with one of these bandages. At the same time the heel of the shoe should be a little raised, so as to keep the knee slightly bent: this being much more convenient than the absolutely straight position.

[In cases of acute inflammation, general antiphlogistic measures may be required as well as the local abstraction of blood. Sir Benjamin remarks that:]

Blisters do harm when there is any very active inflammation going on, but they do great service afterwards; and they operate advantageously in two ways. First, by exciting inflammation in the skin, they draw away the blood from the synovial membrane, and lessen the inflammation there; and, secondly, by causing a great secretion of serum from the skin, they in some way or other cause the absorption of the fluid from the joint, and the fluid being absorbed, the tension of the synovial membrane which tends to keep up the inflammation is relieved.

I said thas we had other means of subduing inflammation besides blood-letting. Of course, purging and diaphoretic medicines are

useful in cases of inflammation wherever situated, but I meant to allude especially to what may be called specific remedies, namely, mercury and colchicum. A gouty person sends for you with acute inflammation of the knee, the urine depositing a red sediment. You find that he has lived freely, taken but little exercise, that acid is generated in the stomach, that he has been for some time flatulent, and his bowels costive. Having taken care that he is in the first instance freely purged, you may give him twelve minims of the vinum colchici in a saline draught two or three times a-day. Never give more than that, for large doses of colchicum are dangerous, and small ones accomplish all that is required. Even the latter should not be taken for more than two or three days at a time. Where inflammation of the synovial membrane depends on a gouty diathesis the effects of colchicum are sometimes marvellous. I have known patients suffering extreme agony to be completely relieved by it in a few hours. But let me repeat, for this is of importance, that you should not venture on the exhibition of colchicum in this or other cases, without previously administering purgatives, and they should also be given occasionally while it is being used. Small doses of mercury also, the blue pill for example, may be given at the same time. The tendency of colchicum is to produce white evacuations, which indicate, I suppose, a diminished secretion of bile. Of course it is not right that bile should not be secreted and evacuated, and the combination of mercury with the purgatives, at the same time that you exhibit the colchicum, prevents the injurious effects that might otherwise arise from the biliary secretion. Mercury may be administered with advantage in another way; that is, not as a purgative, not merely with a view to act on the secretion of the liver, but in larger or more frequent doses, so as to produce its specific effects on the general system. Such mercurial treatment may be often had recourse to with advantage in cases of gouty inflammation, but still more in cases of what may be properly called rheumatic inflammation. The combination of calomel with opium is a very convenient method of giving it in these cases, as it is in those of iritis. Useful as is the mercurial treatment during the active inflammatory state of the disease, it is still more useful at a later period, accomplishing that which can scarcely be accomplished by other means; as I shall explain presently.

There is no essential difference between the treatment of chronic and acute inflammation of the synovial membrane, except that in the former such active measures are not required as in the latter. Leeches may be necessary, but blood-letting from the arm is never requisite. Blisters are very useful here, and may frequently be applied without having recourse to leeches. You may employ either a succession of blisters, or one blister kept open for some time with savine cerate. In cases of gouty inflammation of the synovial membrane having a chronic character, colchicum may be exhibited as an alterative—one or two grains of acetous extract, with as much blue-pill, every night, and aperient medicine every

third or fourth morning; or you may give the acetous extract, with calomel and the compound extract of colocynth, every second or third night: watching the effect of the remedies, and continuing their use for a longer or shorter time, according to circumstances. In such cases a course of the iodide of potassium in small doses, combined with alkaline remedies, may also be productive of benefit. In slighter cases of the disease, liniments that stimulate the skin, but which fall short of a blister, may be usefully employed. The volatile liniment, with oil of turpentine added to it, or the compound camphor liniment, may be rubbed on two or three times daily. The following makes an excellent liniment:—Take an ounce and a half of olive-oil and a drachm of sulphuric acid; when these are well mixed together, add half an ounce of oil of turpentine. This makes a black liniment, which may be rubbed on with a bit of lint twice daily until the skin becomes inflamed and tender. It will produce a good deal of inflammation in the skin, but not a blister. Another convenient method of stimulating the skin is to paint the knee by means of a camel's hair brush with a solution of a drachm of iodine in an ounce of alcohol. This may be omitted when the skin is tender, then applied again, and so on.

I said that mercury was useful in another and more advanced stage of the disease, when the altered character of the pain, attended with starting of the limb at night, indicates that ulceration is going on in the cartilages. Here the only remedy is mercury, and the effect of it is remarkable. Make the gums sore, and the patient who was suffering tortures, will, in a few days, be quite relieved. If it be administered at a sufficiently early period, it will save the limb, but will not prevent anchylosis. Mercury should be given here in the same manner as in cases of iritis, or chronic inflammation of the testicle. Calomel and opium may be administered two or three times a day till the gums are sore, mere alterative doses being insufficient. It is, however, seldom necessary to continue the exhibition of mercury for any very lengthened period. I think that one of the greatest improvements of modern surgery is the exhibition of mercury in these and some other cases of ulceration of the articular cartilage. I do not know any other remedy that will answer the same purpose.

Medical Gazette, Feb. 6, 1846, *p.* 221.

Treatment of Abscess of the Knee-Joint.—[In these cases the suppuration often involves the whole joint, which is one large abscess. The treatment is comparatively simple.]

Make an opening as soon as you can, and let out the matter But what kind of opening? Not a small or valvular one. I really think that there never was a more absurd proposal than that of making a small and valvular opening for such large abscesses. A small and valvular opening will not allow all the matter to escape; it heals directly, and the matter is again collected. All large abscesses, and those of joints especially, should be opened by a very free incision, so that the pus may flow out without squeezing, or any

kind of rough manipulation. I know that mischief sometimes arises from opening a large abscess; but I also know that it is generally from the fault of the surgeon. If a small opening be made, it is only by squeezing and pressure that the abscess can be emptied of its contents; and this rough treatment induces inflammation of its parietes. Not unfrequently it causes also a discharge of blood from the small vessels, which, mixing with the pus that is secreted, afterwards becomes putrid; and I need not occupy your time at present by describing the ill consequences of a putrid abscess. There should not be the pressure even of a finger on the abscess, with a view to force out its contents. Make a free opening, let the matter flow of its own accord, at the same time keeping the joint in a state of absolute and complete repose by means of leathern splints, or by supporting it with pillows and cushions, and it will scarcely ever happen that any mischief follows. If the first opening be made in a depending part, it may be all that is wanted. It may be, however, that one or two openings will be required in other situations afterwards. By pursuing this plan of treatment, and very gentle management so far as your hands are concerned in it, you will generally succeed in preserving the limb. In these cases the disease has its origin in the soft parts. The bones are in the first instance in a healthy state, and the progress of the disease is so rapid, that, although deprived of their cartilages, there is not time for the bones to become materially diseased afterwards: and this explains why there is so much better chance of preserving the limb where there is this kind of abscess in a joint, than where such an abscess occurs under other circumstances.

Of course, after this extensive suppuration, which is always attended with a total absorption of the articular cartilages, no better recovery is to be expected than that by anchylosis; but this is a good recovery, for the limb will be very useful afterwards. Some months may elapse before the limb will be in a fit state to bear the weight of the body; and during the greater part of this time it will be necessary to keep the joint supported by splints. These may be the common leathern splints, unless the leg be bent on the thigh, in which case it will be necessary to have recourse to the screw instrument, with the splints at the posterior part of the leg and thigh. In using the screw, however, you should observe that it is better to leave the leg a very little bent on the thigh rather than quite straight. The former position of the leg is more convenient for walking than the latter, especially if the patient has the heel of his boot or shoe a little raised.

Medical Gazette, March 6, 1846, *p.* 398.

On Gouty Inflammation of the Synovial Membrane of the Knee-Joint.—[This disease is met with in those who lead an indolent life, and indulge too freely in wine and animal food; some of the smaller joints are generally affected first, and it has this peculiarity that there is seldom much effusion within the joint; the synovial membrane becomes thickened, and then absorbed, and the cartilages

are not unfrequently removed by a continuation of the disease to their structure. Sir Benjamin observes:]

In the course of time, that is after the lapse of some years, the cartilages, and even the bones, become absorbed; the fingers being actually shortened and twisted in a variety of ways. Not unfrequently, in cases of long standing, the bones of the knee, examined in dissection, present a singular appearance, as if they had been actually worn away by friction; and in fact they are so worn away, but as a process of repair has been going on at the same time, instead of the cancellous substance being exposed where the friction has taken place, they present a hard and compact surface. In some instances there is a deposit of lithate of soda, or chalk-stone, in the joint itself, and in its neighbourhood. This, like the last, is a very troublesome form of the disease, and is very little under the dominion of remedies. That which, on the whole, I have found to answer best, is the exhibition of very small doses of the acetous extract of colchicum—say a single grain, with the same quantity of blue pill and three grains of extract of hop, every night at bed time, with a gentle aperient once in three or four mornings. You may exhibit these pills for a fortnight, stop them for one or two months, then give them for a fortnight again, and so on. At the same time give a grain and a half or two grains of iodide of potassium, with ten or twelve grains of the bicarbonate of potash, twice daily, and let this be persevered in for six or eight weeks at a time. This system may be continued, with occasional intermissions, for one or two years, or even longer. I have seen several cases where the patient has been much benefited by it, but in others I must acknowledge that neither what I have now recommended, nor any other treatment, has had really any dominion over the disease. This chronic gouty affection (for so I may call it) is not in itself dangerous, but it indicates a bad state of constitution; and persons thus affected are liable to other diseases.

Medical Gazette, March 6, 1846, p. 399.

Scrofulous Disease of the Knee Joint.—[It is hardly necessary to describe the symptoms of this affection. They are tolerably familiar to most surgeons. We give Sir Benjamin's valuable remarks on the treatment:]

I need not occupy your time by describing other methods of treatment which were formerly proposed, or which are, to a certain extent, now in use. It will be better that I should at once explain the results of my own experience on the subject. First, let me say a few words as to what ought not to be done; and a very important consideration this is on many occasions. Blood ought not to be taken away from the joint, either by leeches or by cupping, and far less should it be taken from the general system. The disease depends on a weak state of the constitution, and the abstraction of blood will only tend to its aggravation. Neither blisters, setons, issues, tartar emetic ointment, nor any other kind of counter-irri-

tant, ought to be employed. Such remedies torment the patient; they make him ill from the general desturbance of the system which they produce; they lower him by the continued discharge of matter, and do no good whatever to the malady. I express this opinion in the strongest and most confident manner, having seen this kind of treatment extensively practised formerly, and being able to compare the results with those arising from the treatment which I have since employed.

There is one great principle to be attended to in the treatment of all diseases of joints, namely, that the joints should be kept in a state of perfect repose. If there were an inflammation or a sore in the leg, and it were rubbed all day long, would that inflammation ever subside, or that sore ever heal? If a diseased joint be subjected to friction, as it must be when it is kept in motion, is it likely that a cure can be effected? There is no mode of surgical practice more important than this, that a diseased joint should be kept in a state of perfect immobility. In the early stage of the disease this is the only local treatment that is required, and, indeed, it is the chief thing to be attended to even in its most advanced stages.

There are different methods of keeping the knee in a state of immobility. The simplest method is that of employing the leathern splints which I formerly mentioned, one on each side of the joint. It has the advantage of giving very complete support; at the same time that the splints are easy to be worn, because they exactly fit the parts to which they are applied, and that there is the further advantage of the patient being able to take them off and put them on for himself.

[The general health is to be attended to at the same time that the joint is kept quite at rest.]

As soon as the digestive organs are brought into a proper state, the patient will generally be benefited by the exhibition of what are called *tonics*, but especially of some preparations of iron. To children I give the *vinum ferri* of the old Pharmacopœia, proportioning the dose to the age of the patient. This generally agrees with him very well; and if to this be added the occasional exhibition of purgatives, other medical treatment is seldom required. The patient may take this or some other preparation of iron for three weeks, omit it for ten days, then resume it for three weeks, and so on for an indefinite period: by which I mean to express as long a period as two or three, or even four or five years; our object being not so much to cure a particular disease as to mend a weak constitution. Diseases may often be cured in a short space of time, but a weak constitution cannot be rendered a strong one until after the lapse of some years. The patient generally requires to be watched whilst he is using these remedies. They may overstimulate him and make him feverish, and then the dose requises to be diminished, or the medicine must be omitted for a time, to be resumed afterwards. I have mentioned the *vinum ferri*, but other preparations—for example, the *tinctura ferri muriatis*—may be exhibited, or the

syrup of iodide of iron. I sometimes give the latter and the vinum ferri alternately. It appears to me that in these cases large doses of iron are not required; small doses introduced into the system, off and on, for a great length of time, are what you are to rely upon. Five patients out of six will be benefited by taking iron. Every now and then, however, a patient is met with, with whom no form of iron agrees, and recourse may then be had to quinine, bark, or the alkaline solution of sarsaparilla. The latter combination agrees very well with delicate children, and may often be given with advantage in alternation with preparations of iron.

[In this, as in other scrofulous affections, there will be great benefit derived by a change of air, as well as the exhibition of medicines and a sea-side residence is the most desirable. When the joint has become stiff, there should be no violent efforts to straighten it; it should be done gradually, by means of a screw apparatus. When abscess forms in the joint, the use of splints is not to be discontinued, but they ought to be lined with oil silk, or the purulent discharge will spoil them; but should the disease be neglected, and the joint become quite destroyed, it is best to amputate the limb at once: at the same time, we should not resort to amputation in every case of this kind; for, in some cases, when a scrofulous knee has been removed, tubercle, perhaps before latent, has been called into activity, and the patient has died of phthisis. There are, however, some cases, where amputation should be immediately performed; for instance:]

If, by examination with a probe, it has been ascertained that there is a piece of dead bone connected with the interior of the joint, and so situated that it cannot exfoliate, the limb may be given up at once; there being no chance of a cure, and no remedy but amputation.

I have stated that where an abscess is formed, if the yatient recovers, it will be generally with an anchylosed limb. Bony anchylosis will take years for its completion. A knowledge of this fact is of importance, as it shows that if the limb be bent, there will be plenty of time to get it into its proper place.

Primary Ulceration of the Cartilages of the Knee.—[This disease apparently may originate either in the cartilage itself, or in the orifice of the adjacent bone; but in what Sir Benjamin considers primary ulceration, it invariably begins in the surface next to the articular cavity. He says,]

On examining the joint in an early stage of the disease, the cartilage is found to be absorbed at one point, and the surface of the bone exposed and carious. Probably there is no effusion of any kind in the joint, neither serum nor pus; but the exposed surface of bone is more vascular than under ordinary circumstances. As the disease advances, the ulceration of the cartilage becomes more extensive, and when it has attained a certaint point, pus is formed in the joint. As in some cases there is suppuration without ulceration, so in these there is ulceration without suppuration. As I have observed in a former lecture, the two processes are generally

combined, but there is no necessary connection between them. The cartilages at last become destroyed throughout the knee—on the femur, the patella, and the tibia. Sometimes, when abscess forms, it is limited by adhesion to one part of the joint, and then perhaps suppuration takes place in another part of it. In other cases the abscess is not so limited; the whole joint is distended with matter, so as to form one large abscess; and in this stage of the disease, the bones in the neighbourhood of the joint become inflamed and dark coloured; the matter lodging in the cancelli becomes putrid, probably a portion of the bone loses its vitality and exfoliates into the articular cavity, while the abscess finds its way out in various directions, making numerous sinuses under the fascia, and among the tendons, before it presents itself externally.

While these changes take place in the affected joint, they are indicated by the following symptoms. Generally there are rheumatic pains in other joints in the first instance; by and by the pains are, as it were, concentrated in the knee. The pain is very severe, and yet the joint is scarcely at all swollen, or rather I should say that there is no swelling in the first instance. After a time, there is a slight general enlargement of the joint, the consequence of a deposit of lymph, or serum, outside of the synovial membrane. The swelling assumes the shape of the articulating ends of bones, and appears greater than it really is; because the muscles of the thigh are wasted above, as those of the leg are below. The pain is aggravated by motion, and there is a painful starting of the limb at night. The pain is especially aggravated by pressure on the patella, and whenever, in this or any other case of disease of the knee, this symptom exists, you may suspect that the cartilages of the joint are beginning to ulcerate. The disease may go on not only for weeks but for many months, the patient's health suffering all the time, from disturbed rest at night and constant pain in the day, and yet without suppuration taking place. By and by matter forms, and then there is an aggravation of all the symptoms. The matter, as in all other cases of abscesses connected with the knee-joint, burrows in various directions among the muscles and tendons, making numerous and circuitous sinuses.

With regard to the treatment of this disease, it is important, in the first place, that the joint should be kept in a state of the most perfect repose; and splints are required here as in other cases of chronic affection of this joint. Although I believe that issues, setons, blisters, and counter-irritants, actually do harm rather than good in some other cases of diseased joints, yet I believe them to be beneficial here. A caustic issue inserted on each side the patella will very often stop the pain and the starting of the limb at night, when other means have failed. Nevertheless, issues are not always required, and, in fact, in the majority of cases they may be dispensed with. What, then, is the chief remedy to be employed? That which is used for chronic rheumatic inflammation elsewhere.

Mercury given as for iritis, or chronic inflammation of the testicle, is here productive of the greatest benefit. Two grains of calomel and one-third of a grain of opium may be exhibited three times daily till the gums are affected. The influence of this agent in stopping rheumatic ulceration of the cartilage, is remarkable. In fact, it very seldom fails, if given before suppuration is established.

But some patients cannot take mercury; it either disagrees with them, or for some other reason you do not like to give it, and then sarsaparilla or the iodide of potassium may be substituted with great advantage. Mercury, however, is on the whole the most efficient of the three remedies, and, next to that, sarsaparilla. In many cases, the best mode of proceeding is to exhibit mercury in the first instance, until the disease is arrested, and then follow it up by a course of some good preparation of sarsaparilla. The mercury should be exhibited till the gums are somewhat sore. If it disagrees in one way, try it in another. Mercurial ointment may be rubbed into the thigh in the usual manner, when the patient is unable to take it internally.

In the great majority of cases, as I have already stated, no other treatment is required than splints, to keep the joint quiet, and the putting the system under the influence of mercury first, and of sarsaparilla afterwards; and it is only if these remedies prove to be not sufficient that recourse need be had to caustic issues.

Medical Gazette, March 20, 1846, *p.* 489.

[In speaking of the "*morbid alteration of structure of the synovial membrane*," Sir Benjamin observes:]

There is a curious condition of the synovial membrane in which it seems to have undergone a peculiar morbid alteration of structure. It is thickened in various degrees, sometimes to the extent of an inch and a half, having assumed a sort of pulpy structure intersected by white membranous bands. In some instances there is a preternatural vascularity, and vessels injected with blood are seen ramifying in it to a considerable extent. In other cases no increased vascularity is perceptible. There is little doubt that in some cases this is the result of long-continued chronic inflammation; but in others I am led to believe that it takes place independently of inflammatory action.

[The disease may progress for some time, even years, without any other symptoms.]

As it has advanced to the layer of the synovial membrane, which is reflected over the cartilage, the latter has begun to ulcerate, the ulceration being marked, as on other occasions, by aggravation of pain and startings of the limb at night. At this stage of the disease, small abscesses form in the substance of the diseased synovial membrane. These gradually make their way to the surface, one coming in one place, and another in another, discharging a very small quantity of matter.

When the cartilages are thus ulcerated, the matter is formed in the joint, and perhaps in the substance of the synovial membrane also, the patient's health begins to be affected, as in other cases of articular abscesses, and at this period nothing can be done for him but to amputate the limb. Can any remedial means be employed with success in the early stage of the disease? I used to think *not*, and that is the opinion I have published in my work on Diseases of the Joints. It was my belief that it was a disease not under the control of art: I had indeed seen both local applications and constitutional treatment employed without any good result whatever. But I am not satisfied that this opinion was correct.

[Sir Benjamin here relates a case in which he had an opportunity of watching the progress of this disease for some years. The patient had no pain in the joint, yet it was swollen, the swelling being more prominent in some parts than others. With respect to its treatment, he observes:]

I first of all applied pressure by means of several alternate layers of diachylon plaster and bandage, and this was kept up for a considerable time; afterwards recourse was had to leather splints, secured by a firm bandage, so as to keep the joint fixed at the same time that moderate pressure was made upon it. Constitutional treatment was not neglected.

[This plan was adopted for several years, and the patient gradually recovered, with an anchylosed knee, however. Sir B. Brodie considers the affection to be of rare occurrence; he then speaks of *loose cartilages in the knee*, and says,]

These cartilages may be removed by an operation, which I have performed several times. In some instances no inflammation followed the operation, in others a great deal. In one case which came under my observation, under the care of the late Mr. Jeffreys, suppuration followed, with a great deal of mischief, and the patient ultimately lost his limb. I suspect, however, when such ill consequences ensue, that very frequently it is the fault of the surgeon. The operation requires to be performed with the greatest caution. Get the cartilage fixed over the outer or inner condyle of the femur, and there let it be held, either by yourself or an assistant, to prevent it slipping into the joint. The skin, the cellular membrane, the fascia, the ligaments, and the synovial membrane, must be slowly divided one after the other; the knife being held with a light hand, as otherwise the cartillage will be pressed into the joint, and you will not be able to extract it. Having divided the parts carefully, and made room for the cartilage to escape through the synovial membrane, take hold of it with a tenaculum, or some other sharp pointed instrument, withdraw it, and bring the edges of the wonnd together. If the cartilage should lip away, never grope for it, but bring the edges of the wound together, and no harm will happen, and there will be nothing to hinder the operation being performed on some other opportunity.

It has been supposed that an improvement might be made in this operation, by making a valvular opening; that is, by introducing a narrow sharp-pointed bistoury, puncturing the skin at some little distance, and then dividing the fascia and other parts down to the cartilage, on the principle of the subcutaneous operation performed for the division of tendons. I do not myself see why this method should be preferable to the other; it is not the wound of the skin, but that of the synovial membrane, that makes the danger; and I am satisfied from what I have seen that a principal source of danger is the anxiety of the surgeon to finish the operation, which leads him to grope for the cartilage in the joint when it happens to have slipped away from the wound, instead of waiting for a futnre day.

Medical Gazette, April 10, 1846, *p.* 623.

104.—*On Inflammation of the Hip Joint.*—By Dr. O'Ferrall.—[John Thompson, a young man, nineteen years of age, was under treatment in Dr. O'Ferrall's wards last year for disease of the hip joint. The test proposed by Dr. O'Ferrall, as a means of diagnosing between hip-joint disease and other affections resembling it, was made use of, and it was found that when adduction and abduction of the affected limb was made, the entire pelvis moved, forming an angular lever, whose fulcrum was the acetabulum of the opposite side. On disease in this locality, Dr. O'Ferrall remarks:]

When a hip-joint case is brought under our notice, it is of great practical importance to determine its probable duration, before the period at which we are consulted; for the success of the mercurial treatment will depend much on this question. In Thompson's case, the natis of the affected side drooped, as in cases of some standing; but when he was laid on his face, and the muscles of both nates were equally at rest, there was no remarkable loss of bulk in the muscles themselves. The measurement of the thigh of the affected side, showed also a circumference equal to that of the sound one. There could be no doubt, then, that the case was comparatively recent, for the characteristic wasting, which belongs to disuse, had not yet been established.

It might be thought that the history of the case would be sufficient to determine this point. Nothing could be more fallacious. The practitioner who suffers himself to be led, in this matter, by the history laid before him, and without testing its probability, by the actual phenomena of the case, will have reason to regret his want of self-reliance.

[In another case, a young gentleman, whilst hunting, in crossing a hedge, his left foot was caught in a bramble, and forcibly everted; he experienced great pain in the hip, groin, and knee, and there was perceptible shortening of the limb of one inch.]

The diagnosis arrived at was,—*recent sprain of the hip joint, previously in the state of morbus coxæ.* This diagnosis, most startling and unpalatable to himself and friends, was grounded, 1st, on the

constitution of an angular level by the pelvis and thigh bone, when the latter was moved: 2ndly, on the obliquity of the pelvis, which was, certainly, not of sudden occurrence: and, 3rdly, the fact of a remarkable wasting of the muscles of the entire limb.

[Dr. Colles was afterwards called to see the case, when he coincided with Dr. O'Ferrall's opinion. In two years the patient was quite well, but the limb was half an inch shorter than the opposite one. Dr. O'Ferrall remarks on these cases:]

In the one, the absence of wasting, marked the case, as one of recent occurrence, and promising a recovery from antiphlogistic treatment. In the other, the presence of wasting, with obliquity of the pelvis, enabled him to distinguish an actual case of morbus coxæ, when presented to him as an instance of recent accident only.

The value of the mercurial treatment, introduced by Dr. O'Beirne, is lessened by employing it in unsuitable cases. The diagnosis of stages, in joint diseases, is, therefore, of the utmost importance in practice.

Dublin Hospital Gazette, Nov. 1, 1845, *p.* 84.

105.— *The Knee-Joint Anchylosed at a Right Angle, Restored to nearly Straight Position by Excision of a Wedge-shaped Portion of Bone.*—By Gordon Buck, Esq., one of the Surgeons to the New York Hospital.—[The patient on whom Dr. Buck performed this operation was a healthy young farmer, twenty-two years of age. Seven years previously he had suffered from the blow of an axe, which grazed the bone over the inner condyle. Inflammation and suppuration of the joint took place, followed by anchylosis; the condyles of the femur projected prominently, and the patella was deeply imbedded between them. Several scars marked the parts from whence matter had been discharged, but the skin and subjacent tissues were healthy. The patient's health had been excellent since the injury. He was informed that the position of the limb could not be improved by any ordinary operation, but that it might, perhaps, by the extraordinary one of removing a wedge-shaped portion of bone from the extremity of the thigh-bone: he was made fully acquainted with the difficulty and danger of the operation. Dr. Buck speaks of the operation which was performed on the 12th of October, 1844, as follows.]

Preparatory to the operation, the tendons of the biceps, semi-tendinosus, semi-membranosus and gracilis muscles had been divided five days before, in the usual manner, by two subcutaneous incisions, in doing which the peroneal nerve was unintentionally cut across and was followed by numbness and pain extending to the foot; the punctures, however, had healed, and no inflammation remained in the ham.

The tourniquet having been applied to the upper part of the thigh, an incision was made from the outer to the inner condyle, across the middle of the patella, and a second incision from the

middle of this, perpendicularly downwards to the tuberosity of the tibia. The included parts of integument were dissected down to a finger's breadth below, and parallel with the margin of the articular surface of the tibia. The ligamentum patellæ and the fibro-ligamentous tissues on either side were cut through on the same level to the extent of nearly two-thirds of the circumference of the bone. With the amputating saw a section of the tibia was made at three-fourths of an inch below the joint anteriorly and directed with a slight obliquity upwards. so as to terminate at the margin of the articular surface posteriorly. Two-thirds of this section was accomplished with the amputating saw. The second section was then commenced through the upper part of the patella, parallel with the first, and on a plane forming an angle with it, less than a right angle, and continued to about the same extent as in the first section with the same saw. The remainder of the section through the tibia, as well as through the condyles, was completed with a metacarpal saw and chisels. The included wedge-shaped portion of bone being removed, it was found the section had not been carried far enough backwards, the posterior portion of the condyles still remaining consolidated with the tibia.

To include this a new section was undertaken, commencing upon the cut surface of the femur, three-fourths of an inch anterior to the angle at which the sections already made met, and directed backwards and upwards on a plane more oblique in reference to the axis of the femur. This new section being removed, the remaining points of connection were ruptured by cautiously flexing the leg on the thigh, after which the irregular prominences were pared away with the bone forceps. An attempt was now made to extend the leg upon the thigh, when it was found that the bony surfaces could only be brought to within a finger's breadth of each other anteriorly. The soft parts in the ham being rendered tense and opposing great resistance to the extension, the attachments of the ligaments were dissected up posteriorly from the tibia while the leg was held in a state of extreme flexion, and, in addition to this, a further section of five-eighths of an inch thick was removed from the anterior two-thirds of the femur.

The leg could now be extended to the required degree with the bony surfaces in contact at every point, and the soft parts posterior to the joint in such a state of tension as to give steadiness and solidity to the coaptation.

The section of the condyles exceeding that of the tibia in its antero-posterior diameter, caused an overlapping in front of about half an inch. The hæmorrhage was very moderate, and only two ligatures were required to small branches given off by the popliteal trunk. The soft parts posterior to the joint and separating it from the artery were very little disturbed. The angular flaps of integument being redundant in the new position of the limb, were pared away to the required extent and secured in contact by seven sutures. The limb was then placed on an inclined plane with a slight angle at the knee, and after the patient was removed to his ward, adhesive

straps were applied between the sutures and a compress of dry lint laid loosely over the whole.

The operation, exclusive of the dressings, occupied forty minutes, and though very painful, was borne with remarkable fortitude.

[On the 23rd of October he was going on favourably, but there was considerable suffering from occasional twitches of the muscles, not confined to the limb, and two or three times they had attacked the bowels. Early in January the patient left his bed, the limb being supported with a suitable apparatus, the use of which was soon discontinued, a bandage only being applied. The bony union at the knee became very firm, the shortening being compensated for by a stirrup-shaped shoe. He was discharged on the 22nd of April, a few days previous to which he walked two miles with the aid of a cane only, and without pain or unusual fatigue.]

American Journal of Medical Science, Oct. 1845, *p.* 277.

106.—*Excision of the Upper Head of the Femur in a case of Morbus Coxarius.*—By Wm. Fergusson, Esq., Professor of Sergery in King's College, London.—[The patient was a youth fourteen years of age; admitted into hospital on the 20th of November, 1844. His general health had been good until the previous January, when he became affected with severe pain in the left groin, which did not yield at all to treatment. In three or four months' time his knee became affected, and finally an abscess formed which burst spontaneously; there were all the usual symptoms of hip disease. Mr. Fergusson had for some time held the opinion that such circumstances are eligible for excision of the head of the femur. He observes that]

—The head of the femur appeared to act as a foreign substance amongst the soft tissues of the hip;—there was no clear indication of serious disease in the cotyloid cavity, and it seemed as if the contiguous bones were healthy. The boy's lungs and other viscera appeared sound, and the head and upper portion of the bone seemed for the time the sole cause of his sufferings.

[In consultation with his colleagues the operation was decided upon, and it was performed as follows:]

A longitudinal opening about six inches long was made in the line of the femur, extending from over the head of the bone to a little below the trochanter major, and the tissues were separated from the shaft of the bone, a little below that process, so as to permit a curved needle to be used for the introduction of a chain saw. This latter step was attended with considerable difficulty owing to the depth and obliquity of the bone, and when accomplished proved of little value; for after several trials the instruments (which worked very indifferently in my hands) broke, and I was compelled to adopt another mode of procedure. With a sharp-pointed bistoury I separated all the soft parts from the neck of the bone and the trochanters, and then, by causing the knee to be

moved across the opposite thigh, and using the femur as a lever, the head and portion of the bone thus isolated was so thrust out of the wound that I could with facility apply the ordinary saw for the requisite section. Not being satisfied with the condition of the interior of the bone at the surface exposed by the saw, I enlarged the opening, and removed about three quarters of an inch more, then closed the wound with a few points of interrupted suture, and covered it loosely with a pledget of lint. No vessel of sufficient magnitude to require a ligature was divided. The cotyloid cavity was filled by a fibro-gelatinous mass, similar to the lining of the sinus.

When the patient was placed in bed, a long splint was applied, with a view of keeping up gentle extension; and the limb, as far as the bent state of the knee would permit, was placed parallel with its fellow. The apparatus was somewhat similar to Boyer's long splint, but was so constructed that its upper end could be temporarily removed for the purpose of dressing the wound, and the fulcrum for extension, instead of being on the injured side, as when fracture of the neck of the femur is treated in this way, was taken from the other side of the pelvis.

There was scarcely any shock succeeding to the operation, and the chief complaint was pain in the knee, which for some days after, was more severe than at any previous period. The symptomatic fever was very slight, and disappeared entirely within the first ten days. Part of the wound united by the first intention, the rest soon discharged healthy pus, and speedily showed a disposition to heal. The health improved rapidly, the sweatings ceased, as also the pain in the knee, the appetite became natural, and the patient gained flesh. On the 8th of May, the limb having been for some weeks completely straightened, and the wound having almost closed, the splint was removed, and the patient permitted to move about the wards upon crutches. He has since continued to improve in strength; moves about without trouble or pain; and wears his clothes as if in perfect health.

The length of bone removed was four inches and a quarter, measured through the curve of the neck and shaft, and the limb is now about two inches and a half shorter than its fellow. The cartilage was almost entirely removed from the head of the bone, and the surface was in a state of ulceration. The trochanter and rest of the shaft seemed in a healthy condition, with the exception that the cancellated tissue was loaded with a dark-coloured fluid of an oily consistence, and seemingly mingled with imperfectly-formed pus. I am now doubtful whether this state of the interior was a morbid condition sufficient to necessitate the removal of the additional portion of bone.

[Mr. F. remarks that this is the second case of the kind in Britain, attended with a favourable result. The first occurred to Mr. Anthony White in the year 1818. It is said that Sir Benjamin Brodie has also removed the head of the femur; the

late Mr. Hewson, of Dublin, also performed a similar operation: these cases both died. Sir Benjamin's, in a few days from the effects of the operation, and Mr. Hewson's three months after, from profuse suppuration. These are the only cases in which this operation has been performed by British surgeons. Bourgery gives the names of ten surgeons in other parts of the world who have also performed it. Mr. Charles White, of Manchester, was the first who proposed the operation in 1769, and Mr. Anthony White first performed it in 1818.

In this case of Mr. Fergusson's, on the third of October, 1845, the limb was quite straight; motion of the hip and knee is quite free, and the thigh can be elevated by the action of the psoas and iliacus internus; the lip is free from pain and the sinuses closed.]

Medico-Chirurgical Transactions, Vol. 28, p. 571.

107.—*Immobility of the Lower Jaw successfully treated.*—By T. P. Teale, Esq., Leeds.—Two cases have been related by Dr. Brainard, in which he succeeded in restoring a considerable degree of mobility to the lower jaw, after it had been lost from cicatrization upon severe ptyalism.

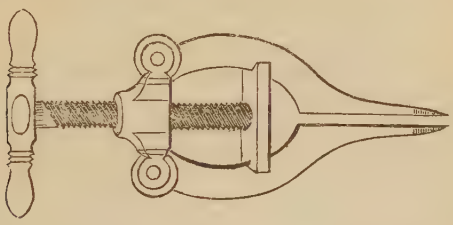
The cicatrix on the right side was separated from the gums above and below, and the cheek detached freely from its adhesions; the firm ligament which extended between the jaws was then divided. The same process was repeated, to the requisite extent, on the left side. Strong efforts were now made to separate the jaws with the hands, but without success. Recourse was then had to a screw lever, by the aid of which the jaw was without difficulty depressed.

The instrument employed for this purpose was constructed by adapting two small plates of steel to a common tourniquet divested of its band. Small blocks of wood were placed between the incisor teeth, in such a manner as to keep the mouth fully open during the whole process of cicatrization, being only moved to allow the patient to take food. The use of these blocks was afterwards gradually discontinued. After the lapse of twenty months, there was a space of three quarters of an inch between the incisor teeth, the speech was restored, the patient could take solid food, and the deformity was entirely removed. The second case was equally successful.

It is of the highest importance, in reference to this operation, to bear in mind the principle upon which its success depends, and which has been judiciously urged by Dr. Brainard. He regards the operation merely as a modification of the auto-plastic principle. When the mouth is pressed open, the cheek is made to supply the place of the lost substance; in this new situation it adheres to the gums, leaving a portion of its substance free between the gums and the upper and the lower jaws.

My friend, Mr. Thomas, of Sheffield, has successfully adopted a similar plan of treatment in a case of immobility of the jaw, consequent upon mercurial phagedena. Mr. Thomas judiciously in-

sists upon the necessity, in similar cases, of keeping up mechanical extension, not only during the process of cicatrization, but for months afterwards.



I have lately found a screw lever, of great use in the treatment of anchylosis of the jaw. The instrument was suggested by the tourniquet apparatus employed by Dr. Brainard, and was constructed for me by Mr. Gay, of Leeds.

Transactions of Provincial Medical and Surgical Association, Mr. Teale's Retrospective Address, p. 101.

108.—*On a peculiar case of Dislocation of the Femur on the Pubes.*—By Dr. Gordon.—[At a meeting of the Belfast Medical Society, in September last, Dr. Gordon read a paper on a peculiar case of dislocation of the pubes, which presented an anomaly very unusual. In all reported cases, the limb is described as everted,—the toes can scarcely be made to turn inwards, as all the muscles attached to the femur counteract the inversion of the limb. Dr. Gordon remarks that:]

If we so place the neck of the femur upon the brim of the pelvis that the extremity would be inverted, and, if at the same time we reflect on the action of the different muscles attached to the upper extremity and shaft of the femur, we shall find that the anterior fibres of the gluteus medius and minimus will elevate the thigh, but the posterior will act in producing eversion; the same condition will be induced by the psoas, iliacus, the adductors, and the other external rotators. Poupart's ligament and the inferior border of the internal, oblique, and transversalis muscles, may, by their pressure on the front of the head and neck, tend to produce inversion, but any action which they might exert would be too near the centre of motion, and would avail very little in counteracting the action of the numerous and powerful muscles just mentioned.

The semi-membranosus, semi-tendinosus, and the tensor vagina femoris muscles, will undoubtedly tend to produce inversion, but in the recent luxation the outward rotators would still preponderate,

and would more than counterbalance any inward rotation which might be produced.

The peculiarities of this case are, I think, easily accounted for, if we first consider the situation occupied by the head and neck of the femur, and after this, the action of the muscles upon it when so dislocated.

The situation of the femur was, as already described, as follows:—The lesser trochanter occupied the acetabulum; the root of the neck rested against the upper border of this cavity; the head projected above the brim of the pelvis, and the trochanter-major was external to the acetabulum. Place a healthy femur in this position, and we shall find that the limb will be everted; and, in addition to this, the fact of the tendon of the psoas muscle being situated between the brim of the pelvis and the posterior and inner part of the neck, will also lead us to suppose that there was a considerable eversion, as the tendon, so placed, would push the neck of the bone more forwards and outwards, and would consequently induce a greater degree of eversion.

The femur thus placed, was firmly retained in this position by the different muscles; in front, it was held against the brim of the pelvis by Poupart's ligament, and by the tendon of the rectus femoris, which lay imbedded in a deep groove in front of its neck, and also by the sartorius; behind it was held against the acetabulum by the tendon of the psoas muscle, which had produced a deep groove on the brim of the pelvis. From this we observe that the femur, not only from its abnormal situation, but also from the mechanical pressure exercised upon it by some of the muscles, would be almost immoveable; now, as a consequence of this immobility, a great number of the muscles being unable to act would degenerate: hence, unquestionably, was induced the complete conversion into fat of the two glutei, obturator externus and internus, pyriformis, and gemelli muscles.

The limb was also much adducted, projected forwards, and, I may also add, everted; (because we cannot place the healthy femur as here described, unless it be everted), a position very favourable to the action of the semi-tendinosus and semi-membranosus, not only as extensors of the thigh, but also as rotators inwards. The attachment of the outward rotators to the great trochanter, and the pressure of the tendon of the rectus femoris muscle upon the front of the neck, would prevent the femur, during rotation, describing a part of a circle, of which the radius would be represented by the length of the neck; before this could take place it would be necessary that these muscles should either be ruptured, or at least their tendinous substance much elongated; but the dissection showed that there was neither rupture nor elongation, but that the fibrous tissue belonging to these was tense, and held the articular surfaces in contact like ligaments. Now, the force of rotation, produced by the semi-tendinosus and semi-membranosus muscles would thus be exerted upon the root of the neck of the femur, and by rotating this bone, as it were, upon its own axis,

would gradually alter the natural position of the shaft to the neck, rolling it forwards and outwards.

This rolling forwards and outwards is not entirely confined to the junction of the neck with the shaft, for, if the upper extremity of the latter be attentively examined, we shall also find it somewhat twisted.

If we reflect on all these circumstances, I think the conclusion is evident, viz., that owing to the situation of the femur, and the action of the muscles upon it when so placed, it was almost immoveable; that as a consequence of this immobility, the greater number of the outward rotators degenerated into a fatty mass, as muscles usually do when unable to act; that the adduction and eversion of the limb, increased the influence of the semi-membranosus and semi-tendinosus as inward rotators, they, during each act of progression, also acted as inward rotators, and having lost their antagonists, the outward rotators gradually produced the inversion observed, and the rolling forwards of the neck upon the shaft of the femur. The great shortening of the extremity was evidently much increased by the pressure from above downwards, causing absorption of the upper and posterior part of the neck, and its descent upon the shaft when the patient used the limb in progression.

In this case we have a remarkable example of the efforts of nature in repairing an injury of so important a joint as that of the hip, by the formation of a strong and thick process for supporting the head and neck of the femur. The same reparative process is not alone confined to dislocations of the hip, we also observe a new socket formed around the head of the humerus when it is dislocated, either on the dorsum or venter of the scapula, and even when the lower extremity of this bone is luxated forwards upon those of the forearm. It seems as if the head of the bone, by its pressure on the surrounding soft parts caused condensation of those, and consequent on this condensation bony matter soon becomes deposited, and firmly attached to the neighbouring bone, forming a strong support to the dislocated extremity. But what appears more remarkable in this instance is, that the base of the new socket, or process, should extend so far backwards upon the iliac fossa; and if conjecture be allowable, we might say that nature continued to add deposit after deposit until she had formed a buttress, which would not only resist any impulse communicated by the femur, but would also bear an assault which would be more than sufficient to fracture this bone itself.

[Dr. Gordon then made the following observations on the reduction of this dislocation:]

The patient is to be placed on his side, and the pelvis fixed by means of a girth passed between the thighs, and fixed to a staple, a little before the line of the body; the leg is to be flexed upon the thigh, and the thigh upon the pelvis, as much as possible; a girth is now to be passed around the upper part of the thigh, at right

angles to the axis of the body, and firmly fixed to another staple. This latter girth will serve as a fulcrum, and, by seizing the lower extremity of the femur, and by pushing it upwards and inwards, we shall cause the head of the femur to pass downwards and backwards towards the acetabulum.

Dublin Hospital Gazette, Nov. 1, 1845, *p.* 87.

109.—*Case of Compound Dislocation of the Astragalus.*—By S. Solly, Esq., F.R.S., &c.—[On the 4th of November, 1845, a labourer, æt. 42, of stout and muscular conformation, was admitted into St. Thomas' Hospital under Mr. Green, with compound dislocation of the astragalus inwards.]

On examination the accident appeared of the nature of a compound dislocation of the tibia inwards, with fracture of the fibula. The foot was everted; the outer edge of the sole inclined upwards, the inner edge downwards. On the inner side of the foot there was a lacerated wound of the integuments, extending from below the internal malleolus, about three inches in length, forwards on to the instep. The integuments were contused and lacerated to a great degree on the outer side, the wound extending from above the outer malleolus across the foot to the metacarpal bone of the second toe, a large flap of skin having been torn up, and a deep chasm exposed beneath: on both sides the tendons were exposed. The anterior and posterior tibial arteries were not injured, and their pulsation could be distinctly felt, though anteriorly only a narrow bridle of skin, about an inch and a half in width, was left between the two wounds, connecting the skin of the leg with that of the foot.

This was accomplished without any apparent difficulty, though it required great care to avoid the division of either the anterior or posterior tibial arteries. The inner malleolus, though not bare, projected through the wound on the inner side. On the outer side, the fibula, which was fractured about two inches above the external malleolus, was completely exposed. Reduction was attempted by Mr. Solly, who visited the man a short time after admission, but with no avail. On consultation between Mr. South, Mr. Mackmurdo, Mr. Solly, and Mr. Travers, it was determined that an attempt should be made to save the limb, to saw off the extremity of the tibia, and to reduce the dislocation.

For this purpose the man was placed upon the table; the wound on the inner side dilated, and the internal malleolus laid bare. The tendon of the flexor digitorum communis was drawn aside by a retractor; while that of the tibialis posticus being so much on the stretch as not to allow of retraction, was divided. At this stage it was discovered that the prominent projection of bone on the inner side was a portion of the astragalus, in natural connexion with the tibia, but separated from the os calcis and navicular bone. It was therefore determined to remove this bone, which was done, and the foot was then easily brought into its natural position. The

integuments were now brought together by sutures, and strips of adhesive plaister; the patient sent to bed, and the limb confined in a swing box.

[On the 11th, there was inflammation of a low character about the wound, and affecting the absorbents; on the 22d, he was requested to have the limb removed, and Mr. Solly amputated the limb below the knee; a considerable amount of blood was lost during the operation.

Dec. 2.—The thigh much swollen, tongue red and tremulous, and protruded with difficulty. Next day an opening was made near the hip, and three pints of unhealthy pus evacuated; stump appeared healthy. He gradually sunk and died on the 12th. Mr. Solly remarks on this case,]

This form of dislocation was new to me, and in weighing the arguments *pro* and *con* amputation, I did not put this into the balance. I candidly confess that if we had, I think it would have just turned it in favour of amputation of the limb; for the dissecting out of the astragalus from the socket of the tibia is certainly a more serious operation than sawing off the end of the tibia. It is true that the astragalus has been frequently removed in compound dislocations, and the patient recovered; but I think, on looking back to all the circumstances of this case, that it added so much to the already extensive injury of the soft parts, that if a similar case were to come before me, I should not be tempted to try by such means to save the limb.

I would, indeed, advise you, in any analogous case, where you might consider it necessary to remove the astragalus, or saw off the end of the tibia, in order to return the bones to their place, never to make a fresh incision to effect it, if you have already an extensive wound in another direction. If you cannot remove the astragalus without so doing, then to remove the whole leg in preference. In the case we have just been considering, there was an extensive lacerated wound on the outside of the foot; but this wound was not in a direction to admit of either the removal of the base of the tibia through it, or the astragalus; and though there was a wound on the inner side, still this wound did not communicate with either of the above-mentioned bones. In order to extract the astragalus, it was necessary to carry this wound down to them, which most undoubtedly added much to the previous injury, and danger of constitutional irritation.

I have remarked, that in those cases in which the astragalus has been successfully removed, it has been removed rather through an original wound, or a dilatation of the original one, or in cases of simple dislocation, where of course only one wound need be made for the purpose.

[A practical point involved in accidents such as this, is the question of primary or secondary amputation. Mr. S. remarks:]

In this individual case I must say that I think the man would have had a much better chance of recovery if the leg had been

amputated in the first instance instead of removing the astragalus, and waiting. My reason for thinking so is the power of reparation which was exhibited in the wounds of the foot, the way in which the sloughs were thrown off, and the healthy granulations that sprung up, and considering the amount of injury, the slight constitutional irritation which arose, and if all this went on favourably with such extensive injuries, can we doubt, with a simple amputation of the leg, that there would not have been less suppuration and less constitutional irritation.

[The late Mr. Colles, of Dublin, was very much opposed to amputation for compound dislocation of the ankle; he made the following remarks on this subject:]

The man to whom I was pupil was very fond of amputation for every kind of compound fracture, and he operated as well and as dexterously as any man I ever saw, yet I never saw a patient on whom he operated for this kind of case, that did not die in consequence—every one of them—they got sickness of the stomach, which never left them; a tumid abdomen, &c. All the experience I have had goes to show the ill tendency of early amputation in compound fractures.

If you must amputate, wait at least until the symptomatic fever has subsided. If there is a necessity to amputate after hectic fever has set in, which, as I have already said, may occur, the hectic will immediately subside after the operation, provided the fever be not owing more to constitutional than local causes. A man, who is in perfect health the moment before he met with an accident, and from which he got a severe shock, is not a fit subject for an immediate operation.

Medical Gazette, Feb. 13, 1845, *p.* 265.

110.—*The Pullies in Dislocation.*—Mr. Terrey, in the *Provincial Medical Journal*, recommends when the pullies are used to reduce a dislocation, instead of using extension by the hands of assistants, that a little wheel, called a click wheel by whitesmiths, be affixed to the wall, and the rope attached to it. One hand turning the wheel, will, he says, do more than six or eight pulling the rope. The little catch or stop, which is an important part of the instrument, keeps up the stretch, and by a close arrangement of the notches round the circumference of the wheel, a gradual and regular increase of extension, even down to so little as the sixth or eighth of an inch at a time may be made.

Medical Times, Dec. 13, 1846, *p.* 241.

AMPUTATIONS.

III.—ON AMPUTATION AT THE MIDDLE OF THH LEG.

By J. A. Lawrie, M.D.. Surgeon to the Royal Infirmary, Glasgow.

[In 1842, Sir H. Hardinge addressed a letter to Dr. Lawrie, wishing him to give the result of his experience on the comparative advantages of amputations at the middle of the leg, so as to enable patients to use the knee-joint; and those immediately below the knee, the patients walking by resting the bent knee upon a wooden pin. He wished to know their comparative activity and power of labour, and which operation was most satisfactory to the men themselves, and how soon, after the limb has healed, in each case, it is fit for use. In reply, Dr. Lawrie gives a number of cases in which both operations were performed, and then proceeds to compare the relative advantages of the high and low operation. He says:]

The two operations may be compared, 1st, As to their immediate, and, 2nd, As to their ultimate results.

1st, The low operation is less fatal than the high. The Statistics of Amputations in the Glasgow Infirmary show, that of all our amputations "for disease," that immediately below the knee is the most fatal. I am not in possession of a sufficient number of cases of low amputation to be able to say statistically what is its rate of mortality; but this much I can say, that I am not aware of a single instance in which it has proved fatal in Glasgow. I have no doubt there have been fatal cases, but I feel certain that they are few in number, and none have fallen under my own observation.

On this point, the table at p. 67 of MM. Arnat and Martin's memoir is very valuable, as showing the low mortality at Paris to be little more than one in ten.

Supposing, then, that its ultimate advantages should be found to be equal, or even somewhat inferior to those of the high operation, the comparatively great mortality which attends the latter, justifies me in saying that it "ought to be abandoned," and the former substituted for it.

2nd, It is less painful, and more easily performed. It is less painful, because the thickness of muscle and of bone to be cut is less; and for the same reason, it is more easily performed, and makes a better operation. But to this last point I shall return, under the head of "The Method of Performing the Operation."

3rd, I feel confident that the smaller amount of wound will insure a more speedy and less painful cure in the low, than in the high operation.

The Ultimate Results of the Two Operations.—1st, The important difference between the two is, that the one insures the use of the

knee joint, the other does not, or, at all events, it is not intended to insure it, and at best does so imperfectly. There can be no doubt that this *per se* is a vast advantage. Of the cases detailed there is not one, the subject of which did not admit that it would be of great consequence if the knee joint could be made available. The whole question then resolves itself into the means we possess of enabling the patient to "avail" himself of the joint thus preserved to him, and a comparison between these means and those employed for the high operation.

The mechanical contrivances for insuring the use of the knee joint hitherto used in Glasgow are the following:

1st, The short pin with a knee strap, without a thigh-piece. Lowest price 15s.

2nd, The above slightly modified. Lowest price 15s.

3rd, Either of the above with a short thigh-piece. Lowest price 18s.

4th, The above with a long thigh-piece, the principal point of support being the tuberosity of the ischium. Lowest price 20s.

5th, Any of the above pins, with the addition of an artificial foot and leg.

We may divide the patients by whom these apparatus may be required into the following classes:

1st, All females.

2nd, Wealthy or independent men.

3rd, Men not occupied at very hard labour, and in lifting heavy weights.

4th, Labourers engaged in severe toil, and employed in lifting heavy weights.

Let us now inquire, how our mechanical contrivances will suit the necessities of these several classes?

1st, *All females.*—I do not recollect to have seen but one female who would use the common pin with the bent knee. She was a coal-porter, and seemed capable of great fatigue. With this exception, all the females, of whatever rank, whom I have met with, have refused to use the common pin, and preferred the crutch. To females, then, the low operation, and any one of the above apparatus, is a vast boon; and as they can employ themselves at sedentary or light work, the simplest of the pins or limbs will suffice.—Jean Eccles, Case 3, walked remarkably well with No. 1.—Miss M'F. and Mrs. M'F., Cases 17 and 13, on the same model, with the addition of an artificial foot and leg; and Christian Blair, Case 18, on model No. 3. The first and last of these are, in point of price, within the reach of the poorest patients; and I cannot avoid saying, that I should reckon any future operator guilty of an act of cruelty who would perform the high operation on any female patient if it could be avoided. The statistics alluded to show that the number of females who undergo amputations, is to males as 1 to $3\frac{1}{2}$, thus removing at least one-fifth of the cases in which there

may be a choice between the high and low operation, from the high, and assigning them, without cavil, to the low.

2nd, *Healthy or independent men.*—I believe this class will universally prefer the low operation, with an artificial foot and leg fitted to one or other of the above models. I should recommend model No. 2, with a long thigh-piece, as the best. This, properly fitted, will enable the wearer to take any amount of fatigue, and to enjoy any amusement on foot or on horseback which he may choose to pursue.

3rd, *Men not occupied at very hard labour, and in lifting very heavy weights.*—I have not met with a single instance, with the exception of Robert Rankin (if indeed he be in this an exception) where the patient did not admit that the low amputation, and some one of the above apparatus, was a great improvement on the high operation and the bent knee. This feeling was so universal that it is unnecessary to adduce instances. They all admitted that the simplest of the models would enable its wearer to do any kind of light work.

[A few of the patients whose cases are recorded by Dr. Lawrie seem to think that the high operation would have been preferable, whilst the majority consider the short pin with a thigh-piece, the best adapted of any for hard labour. This apparatus, too, is very cheap. In speaking of the way in which it affords support, Dr. Lawrie observes:]

This apparatus gives three points of rest: 1st, Below the knee; 2nd, Above the knee; and 3rd, At the top of the thigh. The weight of the body may either be divided between them, or thrown on the thigh if the stump be tender. Indeed, in this latter case, the stump may be perfectly loose in the box, and be only used in binding and extending the knee-joint in walking.

Advantages of the Operation immediately below the Knee, and of the Pin, for the Bent Knee.—The advantages of this operation are, that it allows the patient to use an apparatus so simple, that the majority of the poorer class can make it at a small cost for themselves. The bent knee is not liable to be excoriated except after much walking, and the wearer of the apparatus can undergo a great deal of fatigue. These, undoubtedly, are immense advantages, but are they not counterbalanced by the great fatality of the operation, and the loss of the motions of the knee-joint.

Methods of performing the Operation.—I believe that almost all surgeons will admit, that a good method of operating immediately below the knee is still a desideratum. The great thickness of muscle behind makes the single flap operation objectionable; the double flap is from the same cause a bad operation; and the double circular although (as appears to me) the best, is apt to leave a puckered contracted stump. These objections do not apply with the same force to the anterior and posterior flap operation, or to the double circular when performed below the middle of the leg; the reason is to be found in the form of the limb at that spot.

The two best methods of operating are the double circular and anterior-posterior flap operations. It is unnecessary to enter upon the comparative merits of the two. Whichever is performed, great care should be taken to leave sufficient skin and muscle to cover the ends of the bones. There must be no dragging of the soft parts immediately after the operation; and no adhesion of the integuments to the ends of the bones after the cure has been completed.

In performing the anterior and posterior flap operation, the posterior flap should exceed in breadth at its base one diameter of the limb, and be fully one diameter in length. The anterior flap, composed only of skin, should be at least half a diameter in length. The projecting ridge of the tibia should be pretty deeply sawn off in a slanting direction. If the limb should be removed so low that the tendo Achillis forms part of the posterior flap, it should be cut off with one sweep of the amputating knife, before the stump is dressed. If care be taken to avoid interfering with the nerves, this additional step in the operation will cause very little pain.

One very important question on this part of the subject is, at what point should the bone be sawn, or, in other words, how long should the stump be? I have already endeavoured to prove, that the low operation is by much the less fatal; and I believe I may say in general terms, that, *ceteris paribus*, the nearer the ankle, the less is the danger. Some apparatus-makers object to very long stumps, as being inconvenient for fitting on artificial limbs, or even the short pin. As a general rule, I should recommend the middle of the leg, or immediately below it, as the best point at which the bones can be sawn.

I would caution operators from incurring any risk of leaving disease, encroaching on unsound skin, leaving too little skin, or too short flaps, from a desire to have a long stump; as any one of these errors would more than counterbalance the advantage arising from a long stump, Some of the above cases prove that a *long* stump is not necessary to secure the use of the knee-joint.

The case of John Rankin, William Black, Mr. J., and others, are instances of amputation above the middle of the leg. The stumps are sufficiently short to suit the old pin, while they are long enough to give the free use of the knee-joint, and admit of the adaptation of artificial limbs. I confess I was not prepared to find short stumps so very useful.

I would farther caution operators from allowing stumps to become bent backwards during the process of cure, even although they should be short, and apparently only suited for walking on the bent knee. If the motion of the joint be preserved, the joint may still be used, and admit of the adaptation of any of the forms of apparatus usually employed.

Monthly Journal of Medical Science, March, 1846, *p.* 166.

112.— *On the Prevention of Venous Hæmorrhage during Amputation.*—By Dr. Hannay, Surgeon to the Glasgow Royal Infirmary. —[The occurrence of venous hemorrhage in amputations, is in some cases attended with the most serious results. Dr. Hannay considers the tourniquet, as rather favouring than preventing venous hæmorrhage, and he recommends the application of a skilful and experienced hand, where practicable. Dr. H. also adopts another mode of preventing this hæmorrhage.]

It is the application of a roller or bandage, very equally and neatly, very firmly and perfectly, so as to compress with all bearable firmness the limb from its very extremity up as high as the points of amputation will admit. I had often seen, and those who do not employ this bandage will yet have an opportunity of observing, that the veins of the portion amputated are pouring out blood most copiously, often doubling I believe the quantity of blood lost; which I aver will always be saved by a tight and well-applied bandage. I may perhaps over-estimate the power of the precautionary procedure I now recommend. I cannot over-estimate, however, the end which it aims at; viz. saving the patient's blood in many cases of amputation of the extremities; to the effectual attainment of which, it is my honest conviction, the measure now advised will very powerfully contribute: conjoined with skilful manual pressure (in place of the tourniquet), it will prove as effectual as the nature of things will admit. The roller must, to be serviceable, be applied carefully and exactly, carried up the limb from its extremity with perfect equality of pressure. I usually apply it immediately before the operation, and when the limb can, without much inconvenience, be lifted up above the level of the body, whereby the veins may be kept during its application, in as empty a state as possible. I cause it to be held in that position when applying the bandage.

There has occurred to my mind one objection to the practice in question, and I admit that in some cases there may be some weight attached to that objection. When the limb to be amputated is inflamed, and consequently very painful, it can ill bear sufficient tightness of the bandage; and I have seen the roller occasion considerable distress in a few cases; but I hold that the inestimable advantage of saving blood secured by the bandage more than outweighs the above objection, which, moreover, is speedily removed by the amputation.

Medical Gazette, Nov. 21, 1845, *p.* 1279.

113.— *Hint on Dissecting back the Skin in Circular Amputations.*— By Dr. Hannay.—[The most painful and tedious part of circular amputations is the dissecting back the skin to form a sufficient covering to the stump. Dr. Hannay recommends that an assistant should dissect back the skin on one side whilst the operator does that of the other, and thereby shorten materially that most painful and unseemly part of the operation.]

Ibid, Nov. 21, 1845, *p.* 1280.

114.—*On the Use of Sutures after Amputation.*—By Dr. Hannay. —Whenever stitches are put in the edges of flaps that are rather short, and so made to effect a stretching or dragging of the parts, they are inevitably mischievous.

I therefore offer it as the result of my observation, that when a flap is of sufficient length to meet without the least dragging or stretching, then and there are stitches beneficial, and seldom to be omitted; but on the other hand, if the flaps be scanty, and if the employment of a stitch would keep them on the stretch in the least degree, then will they prove mischievous, and should not be employed. I need hardly say, that the introduction of the stitch through the muscular structure of the flap is never admissible. I am pretty sure that I once saw a stitch which was introduced so as to pass through that tissue produce the most serious evils.

But in this and in all other stumps, the approximation of the lips (by stitches), will depend upon the laxness of the skin, and the quantity preserved by an artful double incision; for the skin must not be drawn together so tight as to put it upon the stretch, lest it should bring on an inflammation and pain.

Ibid. Nov. 21, 1845, *p.* 1281.

115.—*Use of an Opiate before the first dressing after Amputation.*—By Dr. Hannay.—[Dr. Hannay recommends a large dose of laudanum, (30 or 40 minimus), to be given before the first dressing after amputation, particularly of a large extremity. There is no doubt the shock to the nervous system is very great, and we should endeavour by every means to alleviate it.]

The administration of it before the dressing ensures the anodyne effects of the opiate much sooner after the dressing, and probably shortens, as well as mitigates, the distress occasioned by the process, as well as its depressing effects on the œconomy. My observation of the good effects of the practice, leads me to have recourse to it in the first few dressings after amputation of the large members in every instance; and respectfully to recommend its adoption from the benefit and comfort it secures to the sufferer. The anodyne should, to derive all the benefit it is capable of securing, be given fully half an hour before the dressing be proceeded with.

Ibid, Nov. 21, 1845, *p.* 1281.

116.—*Excision of the Head of the Humerus.*—By Dr. Stratton, Canada.—[Dr. Stratton, in a letter to Sir George Ballinghall, describes an interesting case of excision of the head of the humerus: his patient, an Indian boy, about six years of age, received the contents of a musket, loaded with swan shot, in his left arm, he being at the time about six feet from its muzzle.]

August 16. At first sight the wound appears to extend along the outer side of the arm from the shoulder to the elbow, but on re-applying a flap two inches long at its lower extremity, the

wound is reduced to four and a half square inches. In the upper half of the arm the soft parts are much injured, part of them seem to have been shot away, and in the margin of the wound there are several shot-holes in the integuments; two inches of the shaft of the humerus is destroyed; there is a thin glairy discharge from the upper part of the wound; a part of the shaft of the humerus two inches long, and several other loose pieces of bone were removed, and also a quantity of moss which the Indians had applied to stop the bleeding, which they say was not great at the time of the accident. There is but little constitutional disturbance; the skin is cool, the tongue moist, and the appetite moderate. To take castor-oil, and a cloth dipped in cold water to be applied over the wound.

17. With the aid of Dr. Nicolson I proceeded to remove the head of the humerus. The patient was laid on a table with his left shoulder projecting over its edge. Of the lower part of the humerus the projecting extremity had been broken very obliquely, and on bending the arm at the wound, this sharp and almost pointed end was removed, partly with a saw, and then with the nippers. I then took hold of the lower extremity of the upper part of the humerus, and with a small double-edged scalpel cut along it upwards towards its head, from the side of which a small splinter was removed. The head was then turned out of the socket by using the scalpel around it, and turning the other end towards the chest; the part thus removed measured two inches; no vessels required to be tied. Search was made in the soft parts for any pieces of bone that might have been driven in by the shot; lint wet with water, was for the day put in the socket, the soft parts were adjusted so as to make the breach as small as possible; with a sling the elbow was raised up so as to aid nature in shortening the arm, in order that the loss of bone might be less felt; a single turn of a bandage confined the arm to the side, and a cloth dipped in cold water was applied over the wound.

[In one hundred and twelve days after the operation the wound was closed, the left arm a little shorter than the right, and could be elevated nearly as high as he could raise the elbow. On the 28th of April, eight months after the operation, he could use the left arm as well as the right, but could not elevate it quite as high; its motions were free, and he could use it with ease in lifting weights. The left shoulder was a little flattened, which was quite concealed by his dress.]

Edinburgh Medical and Surgical Journal, Jan., 1846, *p.* 31.

117.—*Amputation of a Finger by a new method.*—A robust man had a deep-seated suppuration of the middle finger, with necrosis of its phalanx. The removal of the finger at the phalango carpal articulation became necessary. M. Robert performed the operation in the following manner:—He first made a longitudinal incision along the dorsal aspect of the articulation, extending from the

prominence of the joint to about the middle of the first phalanx, in the direction of the axis of the finger; then turning the bistoury towards the radial side, he made a natural flap which he cut, with a single sweep from below upwards, to the articulation; opened the latter, disarticulated the phalanx, passed the knife behind it, and cut the other flap in the usual manner. Two very long flaps were thus formed, covering entirely the head of the metacarpal bone, and affording the thickest possible cushion. Another patient operated on in the same way by M. Robert, and now cured, allows us to judge of the effect of this mode of operating. The stump has a fuller and softer covering than by the ordinary mode of operating. It is readily seen, indeed, that by merely cutting two flaps by a double oblique or eliptical incision, which unite in the form of an angle on the top of the articulation, soft parts can scarcely be found to cover the head of the metatarsal bone, while on the other hand, if a longitudinal incision be first made, and then the two flaps from the middle of the phalanx, there is much more material for a stump. It is true that the operation is less rapidly done, and is less brilliant than the other, but this is of no consequence, since the result is better. M. Denonvilliers had just amputated an index finger, very much after the same plan as that which M. Robert has pursued for a long time, and which M. Lisfranc formerly recommended in his lectures. M. Denonvilliers informs us that he adopts in all cases of oval amputations the same plan; that is, instead of commencing by marking out the angular shape of the flaps, he makes at first a simple longitudinal incision, which serves as a starting point for both flaps.—*Annales Therapeutique Medical. et Chirurg.*, October, 1844.

Dublin Hospital Gazette, Feb. 1, 1846, *p.* 189.

118.—*On Exsection of the Lower Jaw for Osteo-sarcoma.*—By Valentine Mott, M.D., New York, United States.—[In a letter to Mr. Liston, published in the *London Medical Gazette* for March 20th, Dr. Mott claims for America, originality in this operation. He declares he never heard of its being done any where for this affection when he first performed it, as many surgeons in New York can testify. He says,]

Far be it from me to presume to say, that other surgeons may not have thought of the same expedients, and since performed the same operation, without the least knowledge of what had been done by me. Of one thing, however, I am certain, that an eminent surgeon, now in Paris, informed me that he took the printed sheets of my first case with him to Paris, and told M. Dupuytren of them; he (Dupuytren) requested a translation to be made, stating that in a few days he would give a clinique upon that subject. The translation was made by my friend, and handed to Dupuytren. He gave his lecture with my case in his hand, but made no allusion to it. My firm belief therefore is, that my operation for osteo-sarcoma was performed before those of this eminent surgeon.

Some two or tkree years after the publication of my first case, I read an account of several cases which were operated upon by my friend, Dr. Cusack, of Dublin. Knowing as I do personally that distinguished surgeon, it never occurred to me to say any thing in relation to this subject, in all our intercourse in Dublin and Paris. From whom he derived the idea, therefore, I know not; it may also have been original with him. This, however, can only be answered by Dr. Cusack himself. As you have stated in your lectures published in the *Lancet*, that Dr. Cusack was the *first* to perform the operation of exsection of the lower jaw for osteo-sarcoma, I have felt constrained to make to you this statement in justice to myself.

My first operation was performed on the 17th of November, 1821, and is published at length, with plates, in the *New York Medical and Physical Journal*, vol. i., p. 385.

Since that period I have performed this operation *seventeen times*. In three instances, the bone was removed at the temporo-maxillary articulation. In one of the cases the bone was sawn through at the first bicuspis tooth of the opposite sides.

All surgeons of reading or observation must be aware, that from time immemorial, either large portions, or even the totality of the lower jaw, have been removed or destroyed by violence, various accidents, and in latter times, by gun-shot wounds, fire-arms, &c. It has, also, long been familiarly known that partial or total destruction of the lower jaw has been spontaneously produced by the morbid processes of caries, necrosis, &c. Thus nature herself, in these latter cases particularly, pointing out as it were to the surgeon, from the perfect restoration to health that has succeeded to such disasters, that he himself might venture to follow in her footsteps.

For the great historical details we refer to Velpeau's Operative Surgery, head Exsections, vol. ii. Paris edition. 1839.

But, lastly, we repeat and aver, that the exsections of the lower jaw of even a fourth part, much less a half or two-thirds of it, for any form of sarcoma involving the whole texture of the bone, have never, in our opinion, been performed by any surgeon, past or present, until by myself, at the time above stated.

The *onus probandi* to show that my claims are unfounded, rests with others. For my part I know of no record in existence now, nor did I know of any at the time I performed the operation, as I have already said, which can in the slightest degree militate against my pretensions.

[In the year 1804, Mr. Anthony White, surgeon to the Westminster Hospital, removed the whole of the left half of the lower jaw, for a fungous warty growth, extending from under the left ear to the symphysis of the chin.]

Medical Gazette, March 20, 1846, *p.* 528.

ORGANS OF CIRCULATION.

119.—OBSERVATIONS ON THE TREATMENT OF ANEURISM BY COMPRESSION.

By Dr. Bellingham, Dublin.

[At a meeting of the Surgical Society of Dublin, in January, this year, Dr. Bellingham made some important observations on this subject. He had been making a post-mortem examination of a patient, who had been treated for popliteal and femoral aneurism in opposite legs by compression. He exhibited to the society the preparations he had taken, and remarked:]

Upon a former occasion I laid down the proposition, that to cure an aneurism by compression, such an amount of pressure is never necessary as would cause inflammation and adhesion of the opposed surfaces of the vessel at the point compressed. An examination of the preparation upon the table fully bears out the correctness of this proposition, as we see the femoral artery upon each side to be pervious and uninjured down to the site of the original aneurismal sacs, at which points only its channel is obliterated.

I also laid down the proposition, that it is not necessary to carry the pressure so far as completely to intercept the circulation in the artery at the point compressed, but that the consolidation of the aneurism will be more certainly brought about, by allowing a feeble current of blood to pass through the sac—in fact, that to apply compression successfully, the velocity and force of the current through the artery leading to the aneurism are to be diminished, while the amount of blood passing into the sac is to be lessened, by which the deposition of fibrine will be encouraged, until the sac no longer permits of the entrance of blood. A cure will then be effected in the manner in which nature, under the most favourable circumstances, brings about the spontaneous cure of aneurism.

There is a point connected with the employment of pressure in aneurism to which I have not before alluded, but which is illustrated by the dissection in the present case; it is that the mode in which compression effects the cure of aneurism seems to be more simple, and to require (if I may use the expression) less assistance from nature than ligature. For instance, when a ligature is placed upon an artery in the usual situation at a distance from the aneurismal sac, to prove effectual it must cause the obliteration of the vessel at the point to which it is applied: the blood contained in the sac, or that which finds its way into it by the anastomosing branches (as there is no *vis a tergo*) coagulates, and the main artery of the limb comes eventually to be obliterated both here and at the

site of the ligature: whereas, after a cure by compression, the artery is obliterated *only at the seat of the aneurism.* Indeed for this reason, the application of a second ligature higher up the artery, in cases where secondary hæmorrhage had occurred, almost necessarily fails, and we can hardly be surprised at gangrene attacking a limb, the main artery supplying which is obliterated at three points in its course.

In addition, the cure of an aneurism by compression is more likely to be effectual, and ought to be more permanent, than one treated by ligature; because in the former case the sac becomes gradually filled by fibrine, or the vessel leading *from* the sac is completely obstructed, and no longer permits of the passage of blood, although all pressure is removed; whereas, after the application of a ligature, a loose coagulum of blood alone remains in the sac, which does not fill it, and may or may not extend into the main artery; the parietes of the sac must therefore necessarily shrink considerably, and the artery supplying it must be closed up before the cure can be pronounced to be permanent. That this sometimes requires a long time to be effected, is shown by the pulsation having returned after a considerable interval, in cases where the ligature had been used.

The only objection which it appears to me can be urged with any fairness against the treatment of aneurism by pressure is, that it will probably prove more tedious than the ligature. Admitting this (although in several of the recorded cases it was less tedious,) yet when we take into account its perfect safety, its almost absolute certainty; and on the other hand, the risk, the danger, and the uncertainty of the operation by ligature, particularly in the case of certain arteries we cannot I think, hesitate to give it the preference.

[A great objection to the treatment of aneurism by compression is the amount of pain caused by the pressure; but Dr. Bellingham describes an instrument by the use of which this inconvenience is avoided. He has made use of it, and his patient preferred it to every other mode.]

This consisted in a pad made of a piece of bandage rolled up, and laid upon the femoral artery as it passes over the ramus of the pubis, upon which a weight, sufficient to diminish materially or to check the pulsation in the aneurism, was placed, and maintained in that position by the patient as he lay in bed, with the thigh flexed upon the pelvis. It was an accident which obliged me originally to have recourse to this proceeding, the instrument employed having gone out of order upon a Sunday, when there was no possibility of having it repaired, it occurred to me to try the effect of this simple means. A four pound weight was first used, this was subsequently changed for a seven pound weight, which was found to answer remarkably well. I mention it here, merely because the same mode of applying pressure is stated to have been employed with advantage in a case reported some time subsequently

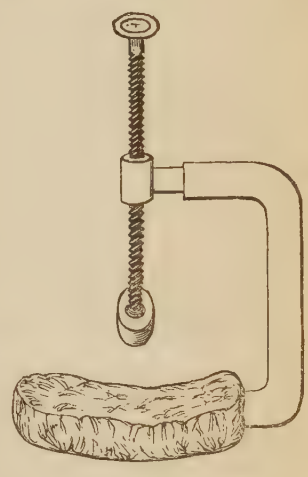
in which no allusion is made to its having been used previously—an omission which I am sure was accidental on the part of the reporter of the case.

Dublin Medical Press, Jan. 21, 1846, *p.* 35.

[In Mr. Teale's "Retrospective address," this interesting subject is again referred to, and an opportunity is taken of showing the kind of instrument by which the compression is made. Mr. Teale says:]

In several cases, the treatment was less tedious thanthe ordinary operation by ligature.

Through the courtesy of Dr. Bellingham, I am enabled to show a drawing of the compressor which he employs. It is a modification of a carpenter's clamp, and was invented by a patient under Dr. Harrison's care. It consists of an arc of steel, covered with leather, at one extremity of which is an oblong padded splint; the other extremity terminates in a nut, containing a quick screw, to which a pad, similar to that of a tourniquet, is attached. One of these instruments may be applied to the artery as it passes over the pubes; the other of similar construction, but smaller size, is applied lower on the thigh, and may be also used for compressing the brachial artery. Dr. Bellingham informs me that so highly satisfactory has been the result of compression in Dublin, that



no surgeon of that city would, in the present day, perform the operation of applying a ligature to the femoral artery for popliteal aneurism. He also adds, that since he adopted the plan of using two compressors, time is saved, and the patient is put to but little inconvenience during the treatment.

In the absence of the usual compressing instrument, Dr. Bellingham, on one occasion, employed the following mode of making pressure upon the femoral artery, which the patient preferred to the use of the compressor. It consisted in the application of a weight of seven pounds, placed upon a pad previously laid over the artery at the groin, the patient lying upon the back, with the legs drawn up. This was found quite sufficient to stop the pulsa-

tion in the aneurism below. The pad was so placed that the weight merely required the patient's hand to be laid upon it to retain it in its place. Dr. Bellingham tells me that it gave the patient no pain at all, and that he was enabled to change his position without inconvenience.

Trans. of the Provincial Med. and Surg. Association, N. S., Vol. 2, p. 99.

120.—*Case of Popliteal Aneurism Cured by Compression of the Arterial Trunk on the Cardiac Side of the Tumour, with Remarks.*—By W.H. Porter, M.D., &c.—[This patient, a tailor, twenty-nine years of age, was admitted into the Meath Hospital on the 3rd of December, 1844. He had always enjoyed excellent health. Six weeks before his admission into hospital, he had felt a stiffness of the thigh, and a pulsation in the right ham; there was a large pulsating tumour filling the whole popliteal space; it could be diminished by pressure, and a loud bruit de soufflet could be heard over every part of it. On the 6th, Dr. Porter applied pressure on the trunk of the femoral artery, acting in such a manner as to keep it up constantly and uninterruptedly. On the 6th of January, the tumour was hard, much less in size, and no longer pulsated, and Dr. P. saw the patient again on the 19th of July, 1845, when there was no tendency to a recurrence of the disease.

It may be urged against this method of treatment, that the process is a very tedious one; but it fairly admits of argument whether it will occupy longer than the management of a case by ligature. The patient certainly is exposed to much inconvenience, which Dr. Porter thinks ought not to be, unless for the purpose of avoiding something worse. In some able strictures on this method of treating aneurism, Dr. Porter observes:]

There is a remarkable condition of an artery which I do not recollect to have seen described, although it must be familiarly known, and doubtless has often been a source of perplexity to every operating surgeon: it is where it forms an abnormal but close adhesion to its adjacent structures, and particularly to its accompanying vein. Every surgeon, in operating, must have observed that it was more difficult to detach from its connections and to denude an artery in some patients than in others; and the dissection of dead subjects will exhibit the same phenomenon, if carefully sought for; but in the latter case it is generally overlooked, either because attention has not been sufficiently directed to it, or that it may not have been regarded as practically important. I scarcely know whether this can be truly called a pathological condition of the artery, being in reality a product of disease. I am wholly uninformed as to its exciting cause, its progress, and its course; and it would only be a conjecture to attribute it to some species of chronic inflammation rendering the cellular coat of the artery thicker and shorter, and disposing it to contract close adhesion to every surrounding structure. However explained, the result is but too evident in many cases where arteries and veins lie in close juxta-

position, and become so mutually adherent as not to admit of separation even by the knife; or, as I have heard it forcibly expressed by a distinguished anatomist, "to possess but one and the same wall." This condition I was formerly in the habit of regarding as existing only between the popliteal artery and vein, where I had heard it spoken of, and seen it demonstrated by anatomists as the natural and ordinary state of the parts; but some years since I was led to modify that opinion by observing, in the dissection of a case of axillary aneurism, this very adhesion established between the subclavian artery and vein at the only point where the vessels came in contact, and where it must have proved a source of insurmountable embarrassment had an operation been attempted. I have since seen it in the axilla in the person of a cripple who had been obliged to use crutches for many years; its existence in the thigh is by no means unfrequent, and I believe it may occur between any artery and vein in the extremities, although, for reasons with which we are at present unacquainted, it prevails in some localities and some vessels more than others.

The femoral artery has probably been the subject of operation as often as all the other arteries of the body taken together: and at the place where it has usually been taken up, it is, in its anatomical relations, rather unfavourably situated, being in front of the vein, which it keeps out of the operator's view. This position of the parts has been constantly brought forward, in explanation of the frequency of the vein being wounded and partially included in the ligature, and the accident, as it was called, uniformly laid to the account of anatomical ignorance, or a want of sufficient surgical dexterity. But this very abnormal adhesion which I have alluded to exists with great frequency between these vessels, and, when it does so, it will furnish a more satisfactory explanation of the occurrence; for, under the circumstances, there is but one wall between them, and in any attempt to pass a needle around the artery, it must be pushed through the vein; the ligature, if tied, must include a portion of it, and occasion an inflammation, that, according to my observation, is certainly and uniformly fatal. Now, let us not, in our own vanity, assert that this is an instance of awkwardness on the part of the operator, and might be easily avoided; neither let us boast our own individual success, which, after all, may be more justly attributable to the accident of not having met with a vessel in this diseased condition. I have seen it happen so frequently, and in such hands, that I feel convinced there must be something more than accident, or ignorance, or carelessness, to occasion it. I know that it has been done by the most dexterous and best-informed men—surgeons constantly in the habit of performing bold and difficult operations, and who never, in other cases, were accused of *mal-addresse*. I once heard a surgeon, whilst in the act of performing the operation, speak of the occasional adhesion of the vessels, and adduce it as a reason why he should proceed with a more than ordinary degree of slowness and precaution, yet he passed his ligature through the vein notwith-

standing, and eventually his patient died. I saw another, who, in passing his needle round the artery, obviously wounded the vein, for about a spoonful of very dark blood welled up from the bottom of the wound: he was aware of what he had done, withdrew the instrument, passed it higher up, and, in the second attempt, actually included and tied a portion of the vein. Nay, I have been present when a lecturer, engaged in demonstrating the operation on the dead subject, and dwelling on the possibility of committing this unfortunate mistake (as he called it), practically fell into it himself by opening the vein: yet here were no cries or struggles to embarrass the operator, no impatience of suffering to occasion anxiety or haste, no blood to obscure his view, nothing to prevent him from calmly and quietly separating the vessels, except the one pathological fact, namely, that they were inseparable.

[The difficulties, however, attendant on this operation, are slight in comparison to the danger, even if we take into consideration one casualty only, viz., secondary hæmorrhage. Dr. Porter observes that the elements of this modern treatment have long ago been resorted to in practice, but not being understood, could not be brought into systematic and combined operation.]

It is familiarly known that blood withdrawn from the circulation of a healthy animal possesses, in general, an uncontrollable tendency to become coagulated, and that it will assume that condition, unless interfered with by artificial means, nay, that it requires great and long-continued disturbance, to the extent of breaking down and disorganising the structure of the fluid, in order totally and effectually to prevent it. Now, the disturbance experienced by the blood contained within an aneurismal sac is occasioned, first, by the action of the heart throwing a wave of blood into it, and then by the reaction of the sac and its coverings returning a part of this back again into the circulation; and we know by experience that this quantum of disturbance is rarely sufficient to prevent coagulation completely, for a portion of the contents of almost every sac is more or less solidified. Again, the reaction of the coverings of the aneurism depends on their elasticity—a dead force, which requires to be acted on before it comes into operation, and, therefore, must bear a relation to the impulse that produces it, so that, if by any means the power with which the blood is thrown into the sac can be reduced, the power by which it is returned must be reduced also, and by so much will the fluid experience less disturbance, and be placed in a condition favourable to coagulation. Lastly, in proportion as the contents of the sac become solid will the impulse it receives, and, of course, its resiliency be weakened (an effect which we see in the feeble and undecided pulsation of old aneurisms): and thus it happens that, the coagulation of each portion of the blood increasing the facility of the remainder to assume a similar condition, the entire comes to be solidified. In this manner it is not difficult to understand how a sensible diminution of the force of the circulation, if maintained

for a given time, can effect the cure of an aneurism, and why it may not be necessary totally to remove it, as used to be the case when the ligature was employed.

[Dr. Porter concludes that it is not necessary for the force of the heart's impulse to be taken away from the aneurismal sac, but only that it should be diminished. The question arises, to what extent this diminution should be carried. Dr. P. thinks it should be regulated according to the dimensions of the tumour, the fluidity of its contents, and the disposition of the blood to coagulate, and other circumstances of minor importance. He says:]

For my own part, I believe, a very moderate degree of pressure, maintained throughout the entire progress of the case, will, in the majority of instances, be found sufficient; that which I employed was barely capable of communicating an impulse from the artery to the instrument, and causing it to vibrate gently in correspondence with the pulsations of the vessel. Under this the limb at first assumed a purplish hue. and, in the course of three or four days, became slightly œdematous, symptoms which, I confess, would have created some alarm, had I not had the advantage of witnessing some of the previously treated cases: it also occasioned pain in different parts of the limb, and this to such an extent in the case of Dr. Murray as to induce him to abandon the treatment for a time, though with a firm resolution of recurring to it at some future period. I can easily understand how the occurrence of such symptoms might awaken the most painful anxiety, and even lead to a discontinuance of the attempt. I can comprehend also how the trouble of attending such a case and regulating the clamps and screws might decide a practitioner in declining to undertake it, but it should be recollected that we do not extol the practice as being simple and safe, and free from pain, and exempt from trouble; we only can compare it with another, and advocate it on the grounds of being more free from danger, more conservative of human life. I do not, then, pretend to measure the extent to which the compression might gradually be increased, or say how far it was carried by other practitioners, but in the cases I have detailed it never at any time was sufficient to arrest the circulation entirely, or cause the pulsation of the tumour to cease, until it ceased altogether and for ever; neither can I conceive how more than a very gentle compression can ever be necessary, if the pathology of the case bears any analogy with, or resemblance to, that in which pulsation returns in the tumour after the artery has been taken up. In this latter case the degree of compression, whatever it may be, is applied at once, and remains afterwards unaltered, and the current of blood, whether it pass through its accustomed channel, or by the circuitous course of the collateral circulation, cannot be mechanically rendered weaker on one day than on the preceding; yet, eventually, under the gradual coagulation within the sac, the symptoms disappear and the disease is cured. Thus, we have satisfactory evidence that it never can be necessary to apply such a

degree of pressure as would induce any really dangerous condition of the parts, even if it could be quietly endured, and we have alsol testimony that a very moderate one will be sufficient,in the interna esting fact, that in a great number of our cases the regulation and management of the clamps and screws were, after a very short time, intrusted to the patients, who would not be very likely to inflict pain upon themselves, or enforce the remedy beyond that which could be easily endured,

Dublin Quarterly Journal of Medical Science, May, 1846, *p.* 277.

121.—*Treatment of Popliteal Aneurism by Compression.*—By G. R. Dartnell, Esq., Staff Surgeon, 1st Class, Fort Pitt, Chatham. —[A private soldier, 38 years of age, whilst walking across the barrack square, felt something give way in his left ham. It affected him so much, that he could scarcely walk to his room; was received into hospital, on the 5th of July. Three weeks after the occurrence took place, Mr. Dartnell describes his case thus:]

On admission here, a soft pulsating tumor, the size of a hen's egg, was found occupying the left popliteal space, subsiding under pressure, and returning gradually with a whizzing sound synchronous with the systole of the ventricle; the heart's action appeared to be normal; there was some œdema of the foot; and he complained of a sense of "beating" in the ham, and slight numbness of the leg and foot.

On the 3rd of August, two wooden clamps, with screw pads, were applied to the thigh, making pressure on the femoral artery, the one in the groin, the other in the lower third of the thigh (all bandages being previously removed), and the patient instructed to regulate the pressure of the pads according to his own feelings, relaxing one, and tightening the other as the pain from either became irksome.

[On the 7th of August, the aneurism was firmer and less in bulk, and had ceased to pulsate. On the 10th, the tourniquet was removed, and a bandage applied over the tumour, and another over the femoral artery, to moderate the circulation through the vessel. On the 21st, the tumour had diminished one-half; his health good, but complains of occasional cramp in the calf of the leg. Mr. Dartnell remarks:]

The chief point of interest in this case (and for which alone it is offered to the profession), is the rapidity of the cure. The tourniquets were first applied on the 3rd of August; and on the 10th (seventh day) were removed altogether. The pressure was not so great at any time as wholly to obstruct the current of blood through the femoral artery, nor was it sufficient to produce even the slightest abrasion of the cuticle. On the 15th day from the commencement of the treatment he was out of bed, and in little better than two and a half months he was able to resume his duties as a soldier.

Medical Gazette, March 13, 1846, p. 464.

122.—*Case of Popliteal Aneurism cured by compression of the Femoral Artery.*—By E. GREATREX, Esq., Surgeon, and W. T. C. ROBINSON, Esq., Assistant Surgeon of the Colstream Guards.—[This patient, a private in the Coldstream Guards, whilst at quick drill in Hyde Park, was obliged to fall out of rank, in consequence of a pain affecting him behind the right knee. On examination a large irregularly-shaped aneurism filled the popliteal space, pulsated strongly, and could be partially emptied by pressure. It was intended to tie the artery, as usual in such cases; but by Mr. Guthrie's advice, pressure was applied to the femoral artery; an additional inducement also was the prevalence of erysipelas in the hospital at the time.]

An instrument was made for the purpose by Mr. Weiss. It consisted of an Italian tourniquet, a broad short splint to fit the outer and back part of the thigh being substituted for one of the usual pads, as less likely to cause pain and sloughing.

It was first applied on the 18th of June, on the artery at about six inches below the fold of the groin, and the pulsation of the aneurism stopped; but on visiting him shortly afterwards it was found to beat again with unabated force, and this was the case over and over again, although the shape of the pad was changed, and various other little alterations tried.

He had now the ill luck to be attacked by modified small pox, which, although slight, occasioned necessarily some relaxation in the treatment of the aneurism.

The same constant escape of the vessel from beneath the pad occurred until the 8th of July, notwithstanding pressure was made as strongly as he could bear it, or as was advisable for fear of sloughing. The knee then measured 18¾ inches, and the tumour had become softer on the outer side, the pulsation and bellows-sound being very strong and loud. On the 8th of July, the plan was adopted of screwing the pad down firmly, and leaving him the key, so that he might, when the pain became intolerable, and "burning like a red-hot iron," to use his own words, relax the pressure by turning the screw for an instant or two, taking care always to apply his thumb or fingers with all his force on the artery just above, in order that during these short but frequent intervals, the passage of the blood should still be retarded, if not stopped.

On the 9th of July this method was found to have been successful, the tumour was now perfectly solid, and no pulsation or bellows-sound has since been detected in it.

The instrument was kept applied as described, for nine days after the pulsation had ceased, to avoid any risk of the stream of blood again making its way into the aneurism: on the afternoon of the 18th of July, it was entirely removed, Mr. Stanley agreeing in the opinion that all danger had passed.

[In three months the tumour was very much diminished, and he could walk on crutches, and in three weeks afterwards he could put his heel to the ground.]

Medico-Chirurgical Transactions, Vol. 28, p. 39.

123.—*Case of punctured Wound, and Ligature of the posterior Tibial Artery.*—By J. F. Arnott, Esq., F.R.S., Surgeon to the Middlesex Hospital.—[In a paper read before the Royal Medical and Chirurgical Society, by Mr. Arnott, on a case of a punctured wound of the posterior tibial artery, he spoke strongly of the necessity of tying wounded arteries near the seat of injury, whenever it is possible to do so, in order to prevent secondary hæmorrhage. He alluded to a case where the femoral was tied, and secondary hæmorrhage, amputation, and death were the result. M. Dupuytren recommended tying the femoral, but Mr. Guthrie deprecates the practice, and advises to cut down upon the wounded vessel, and secure it as near the seat of injury as possible. It appears from Mr. Arnott's paper, that a patient was admitted into the Middlesex Hospital in January, 1845, in whom *it was evident that the posterior tibial artery was probably wounded.* The wound was inflicted by a joiner's chisel.]

Mr. Arnott determined to cut down upon it at once, in order to secure both ends. For this purpose, taking the punctured wound as a centre, he made an incision through the skin and muscles of the calf, to the extent of six and a half inches; the deep fascia being thereby exposed, the opening in it made by the chisel was enlarged to the extent of two inches, After considerable difficulty from the bleeding, it was ascertained that, besides the wound in the posterior tibial, both venæ comites were divided. On account of the troublesome character of the bleeding from these veins, and the difficulty created in discovering the artery, one of them had a ligature placed on both ends, whilst the lower end of the other was subjected to pressure. Two ligatures were then placed on the artery, one above the other, below the puncture; it was not till the latter was tied that the hæmorrhage ceased. But little febrile disturbance followed the operation; the lower ligature on the artery came away on the eighth day, the upper on the ninth. During the night of the eleventh, some bleeding took place from the lower angle of the wound, which was not arrested by compression of the femoral artery, but which was easily checked by displacing some coagula from the wound, and making pressure at the lower part of it by means of a small compress of lint, which was left in the wound. This was removed in three days, and the case proceeded subsequently uninterruptedly to a favourable termination. The wound cicatrized in less than two months, and the patient recovered with a perfectly efficient limb.

The incisions in this case were wholly within the limits of the calf, the external terminating seven inches above the ankle. The pain and spasm of the divided muscles from pressure in separating the sides of the wound during the operation were considerable, but the venous hæmorrhage occasioned most delay.

Taking all circumstances into consideration, the author states, that it must be allowed this mode of reaching the posterior tibial is an operation severe to the patient, and troublesome to the surgeon;

but that, on the other hand, when it is considered that the object of it is to save the limb and life; that by adopting it we take the most likely method of attaining this end, by putting in practice the most certain means of arresting arterial hæmorrhage; that from the evidence of the present case, no danger arises from the mere size of the wound in the calf, and no permanent detriment from the extensive division of its muscles, he thinks that it must be conceded, until experience shows the contrary, that this is the proceeding which ought to be adopted in wounds of the posterior tibial artery high up.

He likewise is of opinion that this will be found to be an easier mode of reaching the vessel when requiring ligature high up for aneurism lower down, than that by incision on the inner edge of the tibia between this and the gastrocnemius muscle, whereby the soleus alone is divided. He dreads, in this mode, the difficulty from pain and spasm, in pulling these muscles aside, to get at the vessel.

Mr. B. B. Cooper said that the author of the paper, in his opinion, had not taken a sufficiently extended view of the subject. In this case he had cut down upon, and tied the artery, below and above the part at which it was wounded—a good practice when the operation could be properly done. Cases, however, might occur, in which it would be more desirable to tie the femoral artery to arrest hæmorrhage from a wound of the posterior tibial artery. The mode of proceeding would depend on the time at which the surgeon was first called to the patient; for if secondary hæmorrhage had occurred, and there had been much inflammation and interstitial deposition and coagula of blood, in parts surrounding the wounded vessel, it would be desirable to tie the femoral artery; for even if the wounded vessel could be secured successfully, secondary hæmorrhage would be likely to re-occur. The author of the paper has referred to cases in which secondary hæmorrhage had taken place after ligature of the artery, at a point above the wound; this had occurred also in cases where the artery was secured at the part at which it was wounded. The cases brought forward by the author were not sufficient to found a general rule on, and the surgeon must in every case be guided in his proceedings by the circumstances presented to him. In cases of wounds of the calf and the leg, in which there was sufficient hæmorrhage to warrant the belief that the posterior tibial artery was wounded, the surgeon, being called early, should separate the soleus from its attachment to the tibia, by which means the artery would be readily found and secured. In this proceeding it was most desirable to cut through the deep fascia, as it rendered the operation more difficult. Where the muscles were divided, as advised by Mr. Arnott, he (Mr. Cooper) was fearful of union not taking place between the divided portions by muscular fibre. In one case in which he had resorted to this proceeding, he was not able to secure the vessel at the wounded part, from the difficulty of finding it. A ligature was

applied above the wound, but hæmorrhage continued, and it was found necessary to enlarge the wound, and place the ligature upon the vessel, 3 inches below the seat of injury. Mr. Travers had some years since performed the same operation. He preferred this plan to the mode advocated by Mr. Guthrie, of dividing the muscles of the calf—an operation which he (Mr. Cooper) had frequently performed on the dead body, though not on the living, as it was not only more difficult, but left the patient in a worse state than did the other.

Medical Gazette, Dec. 19, 1845, *p.* 1480.

[Dr. Hall, of East Retford, having read an account of the previous case in the *Medical Gazette*, was induced to report the particulars of a similar case, which occurred in his practice in 1841. A gentleman had been thrown from his horse, by which a wound of about one inch in length was inflicted at the junction of the upper with the middle third of the leg; the blood flowed very freely:]

A tourniquet was applied to the femoral artery, which retarded the hæmorrhage, but did not altogether check it. The nature of the injury was at once evident, and the necessary steps immediately taken for securing the posterior tibial artery. Introducing a long narrow-bladed knife into the wound, the muscles were carefully divided above and below the seat of injury, down to the deep fascia which was now clearly seen on sponging away the coagulated blood, and into which a small opening had been made.

Enlarging the opening in the fascia, after removing a good deal of coagulated blood, the artery was found, and secured by passing a ligature above and below the wound, and dividing the vessel between them. The wound in the muscles was then brought together, and a bandage from the toes to the upper part of the thigh; the patient appeared to experience much relief from this, which in a great measure, checked the spasm and quivering of the muscles, which was somewhat severe during and immediately after the operation. A large dose of Liq. Opii. Sed. was given. No constitutional disturbance worthy of notice took place. Both ligatures came away on the 12th day after the operation.

This case adds another to those already recorded, in which the posterior tibial artery has been secured in the way recommended by Mr. Guthrie—in which the wound in the muscles has healed favourably, and the patient completely recovered.

Medical Gazette, Feb. 6, 1846, *p.* 233.

124.—*Case of Aneurism of the Carotid Artery.*—By G. White, Esq., Surgeon to the General Hospital, Nottingham.—[The patient in this case was a delicate man, 34 years of age, and of intemperate habits. A small tumour made its appearance three or four months ago, which had gradually increased in size. In consultation it was agreed that it was an aneurism of the carotid, and that it was possible to tie the vessel below the tumour. The operation was performed on the 28th of August, 1845.]

The patient being laid on a table, in such a position that the light fell directly on his neck, an incision, about two inches long, was made through the integuments in nearly a perpendicular direction, and terminating at the inner margin of the attachment of the sterno-mastoid muscle to the sternum, the upper part of the incision being between the tumour and the trachea. This exposed a large vein, round which two ligatures were placed, and the vein divided between them. The fascia and some loose cellular tissue were next divided, and the edge of the sterno-hyoideus brought into view. Crossing the upper angle of the wound was just seen the omo-hyoideus. At this stage of the operation, very moderate pressure with the point of the finger at the bottom of the wound arrested the pulsation of the tumour; but the beating of the carotid could not be felt. The sides of the wounds were held asunder by blunt hooks, and the wound kept clean by small bits of sponge, put to the bottom of it by means of forceps. With forceps and scalpel the sheath of the artery was now scratched through, a nerve (descendens noni) was seen, and pulled aside by the blunt hook, and the artery was fully exposed. An armed aneurism-needle was, with some difficulty, passed behind it from the outer side; but from the great depth and narrowness of the wound, the needle's point could not be brought forward on the inner side of the vessel. The needle was therefore withdrawn, and another, the curve of which formed a segment of a much smaller circle, was introduced with facility. The artery, as it now lay on the aneurism-needle, was compressed with the tip of the finger, and the tumour's pulsation was found to be commanded; the pulsation in the vessel itself was very feeble. The needle being withdrawn, and the ligature firmly tied, the edges of the wound were brought together by two points of suture, and some strips of Macord's plaster.

The patient was then put to bed, and the wound and tumour kept covered by pieces of linen wrung out of cold water. Scarcely an ounce of blood was lost during the operation. The ligature employed was a firm round hemp, one of moderate thickness. Before commencing the operation, the patient was desired to exhale completely, and to keep his chest as empty as possible. While in this state, the upper part of the chest was closely surrounded with a very long firm bandage, and he was instructed to respire, as much as practicable, by the diaphragm and abdominal muscles. By this time the length of the neck was materially increased, and the cervical veins were prevented from being alternately distended and emptied. This ingenious method was suggested by Mr. Sibson, our resident hospital surgeon, and I feel sure very much facilitated the operation. It is remarkable that the internal jugular was not seen, and the descendens noni the only nerve exposed. To have gruel, tea, dry toast, and toast-water.

[On the 2nd of September, whilst retching, hæmorrhage took place from the wound, which was arrested by pressure. The tenth day after the operation, hæmorrhage again occurred, to the amount

of at least a pint; it was again arrested by pressure, and the patient gradually recovered. Mr. White concludes this case with the following observations:]

The foregoing case proves the practicability of successfully placing a ligature on a large arterial trunk, very near to its origin. The facility with which a formidable hæmorrhage was arrested, occurring immediately after the separation of the ligature, is deserving of notice. Was it not from the portion of the artery connected with the tumour that the bleeding took place?

Lancet, Feb. 7, 1846, *p.* 149.

125.—*Sloughing of the Neck after Scarlatina—Hæmorrhage from External Carotid Artery.*—By James S. Hughes, Esq., one of the Surgeons to Jervis-street Hospital.—[Mr. Hughes read the following case before the Surgical Society of Ireland, in April last. The child had been labouring under scarlatina, with extensive sloughing of the throat. About the time when desquamation took place, diffuse inflammation set in on both sides of the neck, and an abscess formed on the left side; the matter was evacuated by a small opening, no blood escaping at the time. The child's health was gradually declining, when a sudden gush of arterial blood took place from the opening. This was ten days after the abscess was evacuated. Mr. Hughes was in immediate attendance, and commanded the bleeding by making pressure on the common carotid artery; the wound presented a jagged unhealthy appearance, and, says Mr. Hughes,]

The parts beneath were in a complete state of slough: there were two or three open-mouthed arteries of considerable size exposed, I attempted to take up two of them, but the ligature came away immediately, having cut through the diseased vessels. Seeing no other hope left, I therefore proceeded at once to take up the common carotid artery. I selected this artery in preference to the trunk of the external carotid, in order that I might apply the ligature as far as I reasonably could from the seat of disease. Mr. O'Reilly saw the case subsequently in consultation with Mr. M'Carthy and myself. The child was almost pulseless when the ligature was applied; re-action, accompanied by a hæmorrhagic pulse, set in so soon after the operation, that it was considered advisable to give her very minute doses of digitalis at intervals. Mr. Farmer, the resident pupil of Jervis-street Hospital, sat with the patient during the first night, as a return of the hæmorrhage was dreaded. There was no symptom of an unfavourable nature after the vessel was tied which could be fairly referred to the operation. The child during the first night after the ligature was applied became suddenly weak under the influence of the digitalis, which was then withdrawn, and stimulants were cautiously substituted; the child had suffered from a stridulous laryngeal cough, owing most probably to the extension of the ulceration of the

throat downwards, which appeared to be somewhat increased after the operation, but it was controlled by the administration of a mucilaginous and sedative mixture.

The child, I regret to say, lived but four days after the operation, but what was peculiarly interesting in the case was, that not one drop of blood escaped from the moment the ligature was applied till the child's death. The sensorial functions remained perfect till within a very short period of death. The child appeared to die of extreme exhaustion from the extensive ulceration of the throat and previous loss of blood. We unfortunately failed in obtaining a post-mortem examination.

As to the immediate nature of this hæmorrhage, it is at times very difficult to say positively as to whether the bleeding has been arterial or venous. Thus my friend Dr. Osbrey, who has written an admirable paper on scarlatina, in which he treats at some length of diffuse inflammation and sloughing of the neck, informs me that he knows of at least half-a-dozen cases of fatal hæmorrhage from these causes, but that it was found very difficult to say in some of them whether the bleeding had been arterial or venous, both from the surgeon not having been in time to see the character of the hæmorrhage, and from the impossibility of obtaining post-mortem examinations. That the veins give way in these cases more frequently than the arteries, there can be no doubt, but that the arteries do occasionally become involved in the destructive process, there can be as little doubt. In a remarkable case of hæmorrhage from the ear following scarlatina, which has been recorded by Professor Porter, there can be but little question from that gentleman's account that the bleeding was arterial, and probably sprung from the trunk of the internal carotid itself. In a case published by Mr. Fergusson, the child died suddenly of hæmorrhage, which was found on dissection to have taken place from an ulcerated opening in the lingual artery, near its origin from the carotid. In the abscess of the neck following scarlatina, which was opened by Mr. Liston in the year 1841, and which was followed by profuse arterial hæmorrhage and death, it is not improbable that this case, which excited so much interest at the time was the result of this diffuse inflammation of the neck terminating in deep-seated abscess, and causing ulceration of the artery. In this case no blame whatever could be attached to Mr. Liston, He brought the case before the Medico-Chirurgical Society of London, under the title of a Variety of False Aneurism, but at the meeting at which the case was discussed, Mr. Bransby Cooper made the following remarks:—

The history of the case was altogether not that of aneurism: the early age, the fact of his being of a strumous habit of body, that the swelling had followed an attack of scarlatina, all were presumptive evidence of the swelling being an abscess.—(Vide *Lancet*, March, 1842.

Dr. Blood lately lost a patient from arterial hæmorrhage from

throat in scarlatina. Dr. Battersby informs me that he lost a boy of ten years of age from hemorrhage from the throat, the result of scarlatina; the child had suffered from the disease in its worst form, from which he appeared to be recovering; the ulceration of the throat increased; secondary fever was established, and suddenly (as the friends told Dr. Battersby), the boy's mouth filled with blood, and he died almost immediately.

Some years ago, I saw a case in Steven's Hospital in which the patient died of hæmorrhage from the internal carotid artery, the result of venereal ulceration of the throat; the man was under the care of the late lamented Dr. Colles.

On the other hand, in three cases of fatal hemorrhage from sloughing of the neck, related in Dr. Henry Kennedy's valuable treatise on the Epidemic of Scarlatina, the *post-mortem* examinations in two of them proved the hæmorrhage to have sprung from the internal jugular vein. In another fatal case of hæmorrhage, which has been furnished me by Dr. Samuel Gordon from Dr. Corrigan's hospital cases, the bleeding was from the internal jugular vein. In the *Medical Press* for March, 1843, I find two cases which are well worthy of observation; the cases were brought before the Medico-Chirurgical Society. The first was under the care of Mr. Bloxham, who gave the following account of it:—The patient, five years of age, after scarlet fever, had suppuration of the glands of the neck on the right side, near the angle of the jaw; five days after the abscess burst, blood of a venous character was discharged from the opening, at first in small quantity, and afterwards more copiously. Graduated compresses were applied, but the hæmorrhage could not be restrained, and the child died on the fifth day from the bleeding. On dissection, an ulceration of an oblong shape, about five lines in its long axis, was found in the inner side of the internal jugular vein, and opened immediately into the sac of the abscess; extravasated blood was also observed beneath the integuments of the throat or forepart of the neck. How very nearly this case resembles Mr. Liston's must strike every one. In Mr. Bloxham's case it was the vein that gave way; in Mr. Liston's the artery. The other case was related by Mr. Snow. The patient was a little boy, who had an abscess just under the angle of the jaw as he was recovering from scarlatina; fluctuation was very distinct in the swelling, and the matter seemed beneath the skin; but as it remained in this state several days without breaking, it was deemed advisable to open it. On an incision being made, however, venous blood flowed in a large stream, without any mixture of pus. The bleeding was immediately stopped with a compress, and did not again return. Two days afterwards the abscess opened spontaneously at a little distance from where it had been lanced, and discharged a quantity of matter without any blood. A similar swelling formed on the other side of the neck, which was allowed to discharge spontaneously, and the boy recovered. Mr. Snow believed that the jugular vein had been opened

in this case, although it was impossible to perceive the vein through the skin.

Dublin Medical Press, April 22, 1846, *p.* 241.

126.—*Two cases of Disease of the Brain following the application of a Ligature to the Carotid Artery.*—By J. P. Vincent, Esq., Surgeon to St. Bartholomew's Hospital.—[The two following cases possess considerable interest. In the first, the patient was forty-eight years of age; he was admitted into the hospital in July, 1829, for the treatment of an aneurismal tumour under the right ear, of eight months' standing. It was about the size of a small orange.]

On July the 18th, Mr. Vincent tied the common carotid artery. In about an hour and a half after the operation, the patient was discovered to be slightly convulsed on the right side. He afterwards sunk into a state of stupor. He was bled to thirty ounces. After this he became more sensible. He had twitchings of the right side. He was again bled during this and the two succeeding days, and altogether lost eighty-four ounces. His left side became paralyzed; his urine and fæces passed off involuntarily; he swallowed with difficulty; and on the 24th he died. On examination of the body, it appeared that the veins of the right side of the brain were not so filled as on the left. The substance of the brain on the right side was quite soft and cream-like. There was no deposition of blood in any part, but a little more serum in the ventricles than usual.

[The 2nd case was a young man, twenty-eight years of age; he was admitted on the 9th of April, 1845.

Whilst smoking a pipe, a few hours previous to admission, he stumbled against a door, and drove the stem of the pipe into the tongue, a little anterior to the left tonsil. The bleeding was trifling; no foreign body could be found in the wound, but the parts were much swollen, which for five days, increased so as to interfere with deglutition and respiration. On the 16th, hæmorrhage took place to the amount of twenty-four ounces; it was arrested by pressure, and Mr. Vincent proceeded to tie the carotid artery.]

It was observed, during the operation, that the patient made violent efforts with his right side, but that he never moved the left extremities. During the night the left extremities were frequently convulsed. His pulse, which had been 132, sunk to 96. During the next two days, the twitchings of the right side and paralysis of the left side continued. About midnight of the 18th, whilst coughing, about an ounce of arterial blood flowed through the nose and mouth, and from the wound in the neck. He was sensible. On the 21st, a fit of coughing, with hemorrhage, to the extent of two or three ounces, from his nose and mouth, terminated his existence.

[On examining the brain, the convolutions on the *right* side were flattened and softened, and in its substance there were cavities filled with ash-coloured effusion, with shreds of a greenish hue.]

Lancet, Jan. 31, 1846, *p.* 134.

[Mr. Teale, in his "Retrospective Address," mentions two instances in which hemiphlegia followed the tying of the carotids. The one occurred to M. Sedillot, the other to Dr. Fairfax: in the former the patient became paralysed on the left side, and died in nine days; a *post-mortem* examination showed that the right side of the brain had been deprived of its due supply of blood. In the latter, the right side was paralysed, and death took place on the 5th day. Mr. Teale remarks:]

I strongly suspect that in these cases the jugular vein, and its tributaries within the cranium, had been obstructed with fibrinous coagula.

Provincial Medical Transactions, Vol. 2, *N.S., p.* 96.

127.—*Ligature of the Left Subclavian Artery, attended with some peculiar circumstances.*—By J. C. Warren, M.D., Professor of Anatomy and Surgery, Boston, U. S.—[At a meeting of the Royal Medical and Chirurgical Society, a communication from Dr. Warren, was read on a case of ligature of the left subclavian artery. A man, about 30 years of age, came under Dr. Warren's care; he had fallen, whilst intoxicated, and injured his left shoulder; it was supposed to be dislocated, by the practioner called to the case, and violent efforts at reduction were made. He was then sent to the hospital, and became a patient of Dr. Warren's. Leeches and cold applications were applied, and next day it was ascertained that no dislocation existed. A few days afterwards, whilst coughing, he felt something give way in his shoulder, which, with the arm became very much enlarged and discoloured. Motion and feeling were lost, and no pulse could be felt; an abscess formed, pointed, and opened, when coagulum escaped, and a large quantity of fluid blood. Three days afterwards, it began to bleed so profusely, that the patient was in imminent danger, and it was decided that the subclavian should be tied. Dr. W. observed that:]

A great difficulty presented itself in the outset of the operation, the swelling of the shoulder, the tumour in the axilla, and the natural shortness of the neck almost obliterating the space between the shoulder and the lower jaw. The author, after minutely detailing the steps of the operation, states that the aneurism-needle was passed under the first dorsal nerve, which was mistaken for the artery. The wound was too deep, too narrow, and in consequence too dark to permit the artery to be visible. The anterior scalenus was partially visible, and, passing the forefiinger of the hand to the edge of this, a good portion of the muscle was divided by the probe-

pointed bistoury, introduced upon the finger. The subclavian artery then became quite sensible to the touch, and slightly distinguishable by the eye. A long aneurism-needle was passed under the artery, and at this moment a slight whistling was heard, and the author was satisfied that some air had entered the thorax. The ligature was tied, and the wound closed.

The patient improved after the operation. On February 22nd, the thirteenth day, the ligature was removed. On the 29th a stream of blood was seen to issue from the unclosed part of the wound; the blood lost amounted to about a pint, did not issue per saltum, and was of a venous colour. The hæmorrhage was arrested by pressure. At the commencement of March, he had an attack of pneumonia, confined to the lower lobe of the left lung, and also a second attack about the 1st of May. By the 1st of October, the swelling had disappeared from the arm, and the motion had returned in the shoulder-joint. The large excavation in the axilla was reduced to a fistulous tube. On February 4th, three hundred and sixty-one days after the operation, the author was able, for the first time, to detect a distinct pulsation in the radial artery, and subsequently one of an indistinct character in the ulnar and brachial. The patient, June 15th, nearly recovered. There were still fistulous openings in the neck and axilla. Sensation and motion were slowly improving.

[In a discussion which followed, Mr. Arnott observed, that Dr. Warren not knowing the exact seat of the injury, adopted the best mode of practice. He also observed, that several points alluded to in Dr. Warren's remarks on this case were not new, as Dr. W. seemed to suppose; as for example, an artery uniting under a ligature without internal coagulum forming—effusion of lymph around the artery, &c.

Mr. Quain said that the line of practice recommended in lesions of arteries, viz. to cut down upon the vessel and tie it at the seat of injury, admitted of exceptions; as for instance, where there was inflammation, with extensive swelling with suppuration, as in Dr. Warren's case. Mr. Quain then spoke of the place where the vessel was tied, and said:]

He was of opinion, that when there was any difficulty about placing the ligature on the vessel where it rests on the rib, it should be made a general rule to seek it beneath the scalenus, or after it had passed beyond the muscle, and before it approaches the tubercle on the ribs. This part of the artery is higher, much higher in some cases, and on this account more accessible (the clavicle being elevated) than where it rests behind the tubercle on the rib.

In illustration of the advantage of the course here recommended, he cited two cases, which occurred in the practice of Dupuytren. In one of these, the first (he believed) in which that surgeon operated on the subclavian artery, he placed the ligature on the part of the vessel which is behind the scalenus. The result was in all respects favourable; and an account of the case was published

by Dupuytren. The second operation was performed a short time after that just referred to, and the intention was to tie the subclavian on the rib. In this instance a large nerve, with half the artery, was included in the ligature. The aneurism-needle had been passed through the vessel. The patient died of hæmorrhage in a few days. The history of this case was not, that he was aware of, published by Dupuytren; it was communicated to the *Edinburgh Journal* by Dr. Rutherford, who was present at the operation. He referred to another case, in which Sir A. Cooper failed to tie the same artery on the first rib; and from these facts he drew an inference in support of the plan of operation above noticed.

[With respect to the formation of an internal clot in the vessel. Mr. Fergusson placed less importance on it than is usually done, for the vessel closes after the application of a ligature near a large branch. This gentleman observed that]

Mr. Porter, of Dublin, had tied, with success, the right carotid within an eighth of an inch of the innominata; and the internal iliac and other arteries which had been tied with success, showed that arteries might close by adhesive inflammation, though immediately contiguous to such a stream of blood as passed through the innominata.

Lancet, Dec. 6, 1846, *p.* 620.

128.—*Ligature of the Subclavian Artery, in a Case of Hæmorrhage from the Axillary Artery.*—By R. J. Mackenzie, M.D., &c.—[The following case is of considerable interest, from the fact of there being so few on record, in which the subclavian has been tied for a direct wound in the axillary artery; indeed, we believe, the practice to be pursued under similar circumstances, would be a matter of doubt with most surgeons.

The patient was 35 years of age; on the 5th of November last, he fell upon a red hot poker, which entered the right axilla, just behind the tendon of the great pectoral muscle; a few drops only of blood escaped, but the pain he described as most excruciating; it was, however, relieved by poultices, the application of which he continued until the 13th, when an eschar separated, and on its coming away, a copious discharge of blood flowed from the wound. It was arrested at the time by pressure, but recurred on the 15th, in a full stream; a compress of linen, kept in place by a bandage, again stopped it; but on the 17th it made its way through them.

The patient was now sinking from the loss of blood, and it was concluded that if the bleeding point could be found, and if it were near the external orifice, the vessel should be tied above the opening, in its coats. In case of this being impracticable, then there were two other methods of treatment.—1st. Ligature of the subclavian, not, perhaps, the method most likely to be attended with success, in consequence of the free anastomosis between the branches of the axillary and subclavian arteries: and, 2ndly, Amputation at the shoulder joint.

In order to afford the patient the opportunity of following his own employment, the former plan was adopted. The idea of tying the vessel at the seat of injury, was at once abandoned, on examination of the injury. The opening passed downwards, three inches in depth, and the artery and nerves lay bare; *the tissues were all infiltrated with blood,* It was then decided to tie the subclavian and the operation was thus performed on the 19th of November.]

The integuments being drawn down by the hand of an assistant, an incision was made over the clavicle, the skin divided, extending from over the outer border of the clavicular portion of the sterno-mastoid for about three and a half inches outwards, parallel with the clavicle, and about half an inch above that bone. A few fibres of the platysma-myoides were divided, and the external jugular vein, which lay in the outer third of the wound, was slightly separated by the knife from its cellular connections, and held by a copper spatula to the outer side of the incision. The rest of the platysma engaged in the wound, and a few fibres of the clavicular portion of the sterno-mastoid were next divided. After a little dissection, and the opening of the deep cervical fascia, the lower border of the posterior belly of the omo-hyoid was brought into view, below which a mass of adipose tissue protruded; this being rather in the way of the knife in clearing the deeper parts, was dissected out and removed, when a branch of the brachial plexus was seen running across the bottom of the wound. On now introducing the finger, the insertion of the scalenus anticus into the tubercle of the rib was easily recognized, and the artery was felt pulsating to its outer side. A blunt hook being now introduced at the inner part of the wound, and the parts slightly retracted towards the sternum, a very slight dissection exposed the coat of the artery. This was laid bare to the extent of about a sixth of an inch, and a common aneurism needle easily passed around it from within outwards. The ligature was then tightened, and tied with a double knot. The edges of the wound were brought together by three points of suture, and a piece of lint, moistened in cold water, applied. One small vessel was divided at the first incision, which was twisted. The patient bore the operation remarkably well, and showed his want of consciousness of the tightening of the ligature, by inquiring, after the knot was secured, if "the tying of the thread would give him much pain."

An opiate, consisting of a drachm of solution of muriate of morphia was given. Some oozing of blood took place about two hours after the operation, by which slight tension of the sides of the wound was produced. Had the stitches been then divided, and the coagula removed, the wound might have been left in a more favourable state for union; but, as the patient, though willing to submit to any thing which might be thought proper, was rather alarmed at any further interference, I thought it better to be satisfied with the continuance of the cold applications.

[The patient did very well, no secondary hæmorrhage coming on. December 8th, the ligature came away. Dr. Mackenzie in concluding the report of the case, observes:]

A return of the hæmorrhage from the axilla was certainly the danger to be most apprehended, and was, perhaps, the only real cause of anxiety for the issue of the case. The free anastomosis, existing between the branches of the axillary and subclavian arteries, is sufficient, in general, to admit of a return of pulsation in aneurismal tumours in this situation, at a shorter or longer period after ligature of the subclavian artery. Had the re-establishment of the circulation, in the present case, proved sufficient to renew the hæmorrhage, amputation must have been immediately performed, as further pressure in the axilla would then have been inadmissible.

Northern Journal of Medicine, March, 1846, *p.* 129.

129.—*Case of Aneurism by Anastomosis of the Scalp.*—By Wm. Fraser, M.D., Montreal.—The aneurismal condition of the extreme blood-vessels, named by the older surgical writers *nævus maternus*, is, by the moderns, still so called in its superficial forms; in its deeper seated, *aneurism* by *anastomosis*, *tumeur erectile*, *tumeur variqueuse*, *placentary tumour*, and in all its forms *telangiectasis*. Previous to the time of John Bell, the deeper forms, or such as lie beneath the skin without involving it, were neither designated by name, nor was their nature understood; they were, probably, confounded with a variety of other diseases, or described as anomalous. Mr. Bell first pointed out their distinctive properties, and denominated them *aneurisms from anastomosis:* this appellation I, on the present occasion, retain, not because I think it the most proper, but because by it the disease is best understood.

[Dr. Fraser's case is chiefly interesting in relation to the question of treatment. The patient was a young man, twenty years of age. He first consulted Dr. F. on the 19th of June last, on account of a small tumour situated over the posterior and superior angle of the right parietal bone.]

About twelve years previously he fell on his back, that part of the head occupied by the tumour struck a log, which produced a bruise of the scalp, this spot became very hard, then commenced throbbing, and has been gradually enlarging; during the year preceding the above date, it had increased more than during any former one, and so troublesome had the whizzing pulsation he then experienced become, that it occasionally prevented him from sleeping; in other respects he enjoyed good health.

To the eye, pulsation in the tumour was very apparent; the scalp covering it was thinner than natural, but not discoloured; to the ear, aided with the stethoscope, the aneurismal bruit was distinctly perceptible; to the feel it was soft, communicated a peculiar thrill to the finger, and could be nearly emptied by pressure, when the bone beneath felt deeply and irregularly indented; on

removing the pressure it re-filled almost immediately. The occipital and temporal arteries on the same side were greatly enlarged, and imparted a vibrating sensation to the finger placed over them. The bone beneath them also was channelled out, evidently by the continued stream of blood passing through the enlarged and excited vessels, having caused its absorption.

[In consultation with several eminent men, Dr. Fraser determined to treat this tumour by means of setons, and small ones were passed on the 19th of June; next day he passed another through, and two through the occipital artery, between the tumour and mastoid process.

Dr. F. next endeavoured to obliterate the occipital and mastoid arteries by twisting around them a hare-lip suture, and painted the tumour with iodine. When the setons were removed, hæmorrhage took place, which was arrested by pressure. As there were still several large branches of arteries supplying the tumour, and a bruit could still be detected in it, he treated them in the same way, by needle and hare-lip suture. The tumour now became flaccid, and was strapped down with a compress of sheet lead and a bandage. By the 27th of September, there was scarcely any perceptible enlargement of the part. Dr. Fraser observes:]

The following published cases of a similar disease, six in number, will illustrate the various plans of treatment adopted for its cure. The first is recorded by Pelletan, in the second volume of his *Clinique Chirurgical.*

Case I.—"Catherine Micat, aged eighteen; entered the Hotel Dieu in September, 1805, on account of a tumour which occupied the whole of the temporal region, and appeared to be composed of arteries enormously dilated. The ear was red, large, and agitated throughout by pulsations synchronous with those of the heart. At the top of the helix was a cicatrix, which gave way at the slightest touch, and the crevice resulting from its rupture, furnished a brisk and obstinate hæmorrhage; and this was renewed at every attempt to change the dressings. Pressure applied over the temporal artery arrested the movement and pulsation in the anterior part of the tumour. Permanent compression over this vessel was therefore commenced as a means of cure, but it was found to be too painful to be continued. M. Pelletan next undertook to secure the temporal and occipital arteries: but in the operation the temporal artery was transfixed, and only partially taken up; and in passing the needle under the occipital artery, blood gushed out from both extremities of the puncture; but after dividing the integuments over it this was secured, and pulsation ceased in the tumour. Compression was again employed, but it produced a slough, in consequence of which it became necessary to dress the part oftener than usual; at each dressing the hæmorrhage recurred, and the pulsation, though less strong than usual, was renewed. In the course of treatment constitutional symptoms ensued, erysipelas appeared on the face, an abscess formed in the centre of the

tumour, and another over the sternum; the occipital artery bled frequently; and, finally, at the end of three weeks from the operation, the patient d ed."—*American Journal of Medical Science*, May, 1839.

Case II.—This case occurred in the practice of Mr. Wardrop, and is thus described in the *Lancet*:

"———, æt. twenty-two, of a full and powerful habit of body, On the left side of his head, covering a portion of the frontal, parietal, and temporal bones, is a very large pulsating tumour, whose surface is extremely soft and very irregular, forming many lobules of various sizes and position, and resembling in appearance, those large varicose tumours which are occasionally found in the course of the saphena vein of the thigh. The pulsation is distinct throughout every part of the tumour, which can easily be emptied of its contents by pressure. The trunk of the temporal artery, and its anterior and posterior branches, are uncommonly enlarged, and pulsate with remarkable vigour. The two latter terminate suddenly in the swelling, which occupies the usual position of the middle temporal artery. The posterior aural artery and the occipital, as well as a branch from the temporal vessels of the opposite side, are wonderfully enlarged, and they communicate abruptly with the disease. All these arteries have attained such a size that their situation is evident to the eye. On emptying the tumour of its contents, the cranium below is found to have undergone a remarkable process of absorption, particularly at those points where the tumour has attained the greatest bulk. It must at many places, have become exceedingly thin. The integuments covering the most prominent portion of the swelling, have become very much attenuated, and it is evident that ulceration of them must soon be the consequence of the distention. Over the trunk of the temporal artery is a long cicatrix, the result of an operation which was performed for the ligature of that vessel. The patient complains of frequent most distressing pains in his head, in other respects he enjoys excellent health. The complaint commenced twelve years ago, after the receipt of a blow, and has increased gradually. Two months since, a Mr. Babington applied a ligature to the temporal artery, but this did not in any way check its progress."—No. 211, p. 762.

Mr. Wardrop tied the common carotid immediately, upon which the tumour ceased to pulsate, but did not contract.

Secondary hæmorrhage occurred on the fourth day after the operation, and required the most active exertions of Mr. Wardrop and his assistants to prevent its proving fatal. The patient escaped this danger, but the tumour suffered no amendment; and he died from some other cause, in the course of two months.

Case III.—Is related by Dr. M'Lauchlan, in the second number of the *Glasgow Medical Journal*.

"W. Maclure, æt, thirty, a discharged soldier. Soft, puffy,

pulsating, and somewhat elastic swellings, of a varicose appearance, were found to occupy the course of the temporal, posterior aural, and occipital arteries, and their principal branches, each branch terminating by a tortuous extremity. These swellings could be made to disappear partly on pressure, but on its removal they speedily regained their former volume. They pulsated throughout their whole extent, and the pulsations were synchronous with those of the heart. By pressing on the common carotid, the pulsations ceased all along the swellings; and by interrupting the flow of blood through the temporal or posterior aural, the throb was interrupted in corresponding parts of the tumour. They were not painful on being handled, but he complained much of the torture he had experienced for the last two months from the throbbing, which often deprived him of rest for nights together, and, as he said, made his existence miserable to him. The integuments covering the swellings were of their natural colour; only at those points which were most prominent, they had a slightly bluish red tinge. About ten years previously he had the temporal artery opened for an attack of ophthalmia. A small aneurismal tumour formed at the point of incision, for the cure of which the artery was cut across lower down; but this not succeeding, the vessel was again exposed and the ligature applied. The little tumour disappeared only for the time; on its return it was but small, gave him no uneasiness' and although he served as a soldier for five years afterwards, he never complained of it to his surgeon."

Dr. M'Lauchlan tied the temporal artery, upon which the anterior and central portions of the tumour ceased to pulsate, and felt flaccid and doughy. But being apprehensive, from the extreme thinness and expansion of the coats of this vessel, that the obliterating process would not be effectually and safely performed, he, on the day following, tied the common carotid. The patient was soon afterwards seized with inflammation of the chest, which, notwithstanding the most free depletion and other active measures, proved fatal, on the fourth day after the operation.

Case IV.—Was published by Mr. Syme, in the *Edinburgh Medical and Surgical Journal*, No. xcviii. in connexion with the preceding cases.

"About the middle of July, 1828, I was consulted by Mrs. T., aged fifty, on account of a tumour about the size of a large gooseberry, which was situated behind the right ear, over the mastoid process. I at first sight conceived this to be a common encysted tumour, which it exactly resembled, but upon compression, discovered that the disease was of a very different nature. It readily yielded to the finger, and in its place there could be felt a considerable depression. So soon as the pressure was removed, it immediately filled again, and if the finger was gently applied while this took place, a jet of blood could be felt issuing from the bottom of the tumour, and the patient heard such a whizzing noise that she could hardly be persuaded the bystanders also did not

perceive it. Below the tumour I felt the posterior auricular artery greatly enlarged, and throbbing with violence; when this vessel was compressed the tumour became flaccid. The patient complained of pain and noise in the swelling, the latter being often so distracting as to deprive her of sleep.

The swelling was first noticed after an accouchment about ten years ago. It had increased very gradually until of late, when its progress was more rapid. Several years ago, she asked the opinion of several physicians and surgeons, who recommended pressure, which was accordingly tried, but without any advantage."

Mr. Syme tied the posterior auris a little below where it entered the tumour, which became flaccid, and the dilated vessels disappeared.

On the eighth day after the operation, happening to press on the tumour, blood trickled away from the side of the ligature, which ceased on applying pressure, it recurred twice in the twenty-four hours on the following day, and was arrested by the same means.

"For some weeks after the operation, the tumour remained small and flaccid, but when the patient resumed her ordinary diet and exercise, it began to resume its former condition. It was moderately tense; and though no throbbing in it could be felt with the finger, Mrs. T. complained of the noise and pain which had distressed her previously in a degree comparatively slight, but sufficient to disturb her repose. No appearance of the varicose dilatation of the artery could be perceived.

Finding that the uneasy symptoms continued to increase, and being anxious to take advantage of the command which had been obtained for the present over the disease, by obstructing the principal supply of blood, I determined to take an effectual step for the patient's relief.

On the 29th of October, assisted by Professor Ballinghall, I cut directly through the long direction of the tumour, which then showed itself to be composed of large irregular cells, invested by a firm capsule. While Dr. B. compressed above and below the tumour, I dissected it out, and then attempted to tie the vessels, but finding this very difficult, I adopted the suggestion of Dr. B., and included them in ligatures by means of a small curved needle. The ligature being drawn, the hæmorrhage ceased. I then filled the wound with dry caddis, and applied a firm bandage about the head. The patient did not experience the smallest inconvenience from the operation, excepting the pain immediately attending it. The ligature separated in about a fortnight, and the wound is now completely healed."

Case V.—Is recorded by Dr. Gibson, of Philadelphia, in his Institutes and Practice of Surgery, vol. ii., p. 397.

"Elizabeth Laush, a married woman, twenty-five years of age, residing in the neighbourhood of Reading, came to Philadelphia in

the month of April, 1823, anxious to obtain relief for a very large pulsating tumour, which nearly covered the right side of her head, and sometimes bled so profusely from numerous ulcerated spots on its surface, as frequently to endanger her life. This tumour had existed from infancy, but its increase was so gradual, and the pain attending it so inconsiderable, as to give her little uneasiness. After her marriage, and especially during her second pregnancy,—in which she was four months at the time I saw her, the growth of the swelling was so rapid. its pulsation so alarming, and the hæmorrhage from it so frequent and debilitating, that she was prepared to submit to any operation I might propose for her relief.

My first object was to cut off temporarily the chief supply of blood to the tumour. With this view I made several incisions, each about an inch long, through the scalp, and at some distance from the margin of the tumour, and tied the chief branches of the temporal and occipital arteries, many of which were enlarged to the size of the common carotid. Having in this way encircled the diseased mass, I had the satisfaction to observe the pulsation diminish, and the tumour particularly to shrink; the hæmorrhage, also, from the surface had ceased. A slight erysipelas of the scalp followed the operation. This occasioned a week's delay; in the meantime the blood was evidently finding its way through the anastomosing vessels to the tumour. An incision was made about two inches long by a single stroke of the knife, through the integuments to the bone, commencing near the back part of the ear, and midway between the edge of the tumour and the line at which the arteries were taken up in the first operation. An incredible quantity of blood issued in a moment from every part of the wound; in a few moments, however, every vessel was secured. By this time the patient was so extremely faint, as to render it impossible to proceed farther, indeed, many of the spectators supposed her to be dying. Without delay, therefore, she was conveyed to bed, and the wound dressed by interposing lint between its edges to prevent their re union. In ten or twelve days the patient had so far recovered her strength as to enable her to submit to a farther incision of the scalp, commencing at the place where the last operation had terminated. This operation was also continued so long as the patient could bear it, or as was deemed prudent. Lint was then placed in the wound. and the patient put to bed, and carefully nourished for a fortnight, at which time the third and last operation was performed, by dividing the remaining portions of the integuments, and removing the tumour from the bone. This was accomplished with comparative facility, the tumour being by the preceding operations nearly drained of its blood, and almost insulated. Care was taken in separating the diseased mass not to remove the pericranium; the bones, therefore, notwithstanding a great portion of the parietal and occipital was exposed did not exfoliate, but were covered in a few days by florid and healthy granulations, the edges of the wound gradually

approximated, and were so far closed in four or five weeks, as to enable the patient to return to the country, where, in a little longer time, her health was perfectly re-established, and at the end of the usual period she was delivered of a promising son."

Case VI.—Is published by Dr. Easdaile, in the *Indian Medical Journal.*

"Madub, an untried prisoner, aged thirty, of slender make, but healthy looking, admitted into hospital 25th March, 1844. A soft, elastic, pulsating, irregular swelling occupies the head from the left temple to the right ear; at the crown of the head it shoots up into a conical tumour which pulsates violently, and the skin is thin, red, and tender to the touch. All the arteries of the scalp, on the left side, are greatly enlarged and beating strongly. The temporal is as large as a goose quill, and whizzes under the finger; the occipital and auricular arteries are equally active. The varicose veins form a cluster of grape-like tumours, and discharge themselves chiefly by the auricular vein, which is of a great size; when this is stopped the whole scalp whizzes under the hand. The arteries on the right side are also very active, especially the occipital, and it is to be feared that the disease has extended to them, but it may be local excitement only. It commenced six months ago, by the patient's account, but probably sooner. Its progress has been so rapid, however, and the present state is so alarming, the integuments being on the point of bursting, that an operation is absolutely necessary to save his life."

On the 31st March, Dr. Easdaile tied the common carotid artery.

On the 13th April, (on which day the case is reported), the ligature was gone, the swelling was daily decreasing, the integuments were quite lax, and the supply of blood from the right side sufficiently interrupted—the excitement of the arteries was going off, and a radical cure was expected.

The treatment of the class of aneurisms by anastomosis, to which the preceding cases belong, may be conducted on three different principles. 1, Removal of the morbid structure. 2. Diminution of the arterial supply. 3. Effecting change of structure.

Each of these plans may be executed in a variety of ways, and they may be variously combined. For instance, in cases IV. and V., the second and first were conjoined, and in my case the second and third. To attempt the first plan in such tumours as the preceding, without its being preceded by the second, might be attended with the most serious consequences—the gush of blood might prove instantly fatal. Hence the safest and best method of cutting off the arterial supply is a question of some interest. The minor operations by which this has been attempted are four in number: 1. Pressure over the arteries. 2. Taking them up. 1. Making incisions through the scalp around the tumour, and taking up the arteries. 4. With needles and sutures as done successfully in M'Ewan's case. As examples of these different practices are re-

corded in the preceding cases, I will leave the reader to draw his own inferences as to their comparative merits. When the obliteration of the feeding arteries is accomplished, by whatever means, I feel assured, that in many instances at least, further proceedings will be uncalled for.

Within the last few months, *electro-galvanic action* has been successfully employed to effect the consolidation of aneurism, by Dr. Petrequin, chief surgeon to the Hotel Dieu at Lyons. Three cases have been treated by him with electricity, but two of his patients have been lost sight of, before the influence of the treatment could be duly appreciated. The following are the interesting particulars of the third case:

"Case.—Traumatic Aneurism of the Temporal Artery.—D., aged nineteen, a locksmith, was brought to the hospital senseless, on the 4th of August, 1845, immediately after a violent fall on the head. The lower maxilla was fractured at the symphysis and the left orbit was the seat of considerable ecchymosis. The symptoms of cerebral commotion had given way in a great measure when variola declared itself. The rupture fever accomplished its periods in the usual manner, and it was only on September the 9th, five weeks after the accident, that Mr. Petrequin could direct this attention towards a tumour occupying the left temporal region, and which he had noticed long before. The swelling was of the size of an almond, soft, and almost indolent on pressure; it was seated on the course of the temporal artery, and presented pulsations isochronous with those of the arteries. These pulsations ceased when pressure was exerted on the temporal artery below the tumour, and re-appeared on the pressure being removed. These signs left no doubt of the nature of the case, and aneurism of the temporal artery probably due to the injury experienced by the vessel during the accident, was diagnosed. On the 10th of September, galvano puncture was performed by the introduction of two sharp steel pins crossing each other at right angles in the tumour; the heads of the pins were then placed in communication with the wires of a voltaic pile. and a shock and a sharp pain were experienced by the patient, the pain increasing with the intensity of the electrical action. The operation lasted ten minutes, and fifteen plates were employed. The pulsations gradually diminished in the tumour during the operation, and at its close had nearly disappeared. No accident followed the experiment, but a solid indurated swelling took the place of the tumour, the temporal artery ceasing to beat *above* the aneurism, while its pulsations remained distinct below. On the 20th of September, absorption had achieved the cure, and neither tumefaction nor pulsations could be detected in the spot where the malady had existed. M. Petrequin gives the following precepts, which he deems will ensure the complete coagulation of the blood contained in aneurismal tumours:—1. Compression of the artery between the aneurism and the heart during the application of the galvanic agency.—2. The pins introduced

into the tumour should be numerous, cross each other at right angles, and their surface should be protected by a coat of varnish, in order to prevent unprofitable loss of the electric fluid.—3. After the operation, ice should be applied to the tumour. This is the first case on record of aneurism cured or even treated by this method, which has been of late employed in the treatment of a large number of diseases." "The coagulating influence of electricity on blood leads us to hope that it will be found as advantageous in external aneurism, and that Dr. Petrequin's case will not long remain a solitary instance of success."—*Medical Times.*

For the practical application of this remedial agent in the treatment of aneurism, Dr. Petrequin is entitled to the gratitude of the profession; at the same time it is right to bear in mind that the idea did not originate with him, for years ago, "it has been suggested that galvanism might be applied to the important purpose of coagulating the blood within an aneurismal tumour, and thus removing the disease without resorting to the ligature." Should it prove as effectual in other hands as it appears to have been in the above case, it will form a new era in the treatment of the ordinary forms of aneurism, and I have no doubt can be made available in that of aneurism by anastomosis.

British American Journal of Med. and Phy. Science, Feb. 1846, *p.* 283.

130.— *Treatment of Nævi* —The editor of the *British and Foreign Medical Review* makes the following remarks, in noticing Professor Dieffenbach's Operative Surgery. He says, the Professor]

Speaks highly of the effects of the pure liquor plumbi, and of the solution of alum, in flat nævi up to the size of a crown-piece. Lint steeped in the lead solution is fastened over the part with a bandage, and the lint wedded by fresh applications of the lead, without frequent removal of the lint. After days, or weeks, the swelling becomes whiter, flatter, and firmer; soon after, little firm white spots form on the surface, and the cure is certain. By means of the solution of alum and compression, Dieffenbach has cured nævi so large that extirpation would have been impossible. It may be necessary to keep it constantly applied for six months.

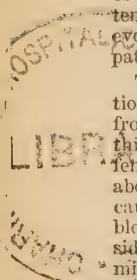
Extirpation of the tumour and union of the edges of the wound by needles and twisted suture, is the best method of all, when the lead or alum has failed. Extirpation is to be either total or partial, according to the size of the tumour. If partial, it is done in the same way as partial excision of a cicatrix.

British and Foreign Medical Review, April, 1846, *p.* 290.

131.—*Case of False Aneurism.*—By Robert Liston, Esq., F.R.S., &c.—[At a meeting of the Royal Medical and Chirurgical Society, in April last, Mr. Liston gave the particulars of a case of false aneurism, which had been treated by ligature. The patient was twenty-eight years of age, and exceedingly corpulent. On the 23rd of May, 1845, he received a pistol-shot in the upper

and outer part of the right thigh; the ball traversed the course of the femoral vessels, and passed out at the left groin. The hæmorrhage was very profuse, and it was with great difficulty he could be roused from a state of syncope into which he had fallen. A large tumour formed at the lower part of the abdomen, from the extravasation of blood: as this increased in size, a pulsation could be detected in it; it was of an oval form, firm, but elastic, the skin covering it was discoloured and thin; the opening in the groin had closed with a very thin cicatrix. The appearance of the patient indicated extensive loss of blood. Mr. Liston observes:—]

The nature of the case was very apparent. A large false aneurism, not well bounded, rapidly increasing, and arising from a wound of the femoral artery, or some branch divided close to its origin, had to be arrested, otherwise the patient must be left exposed to the risk of perishing suddenly, and at no distant period. After consultations on the evening of the 30th, and morning of the 31st, the external iliac artery was tied, with the loss of not more than a tablespoonful of blood, and with the immediate effect of arresting the pulsation, and removing, in a great measure, the tension of the tumour. Symptoms of peritonitis supervened the evening of the second day, and on the following afternoon the patient sank.



The author subjoined an account of the *post-mortem* examination by Dr. Allen, of Haslar. The course of the bullet was traced from the outside through a dense layer of fat, about two inches in thickness. It had divided one of the superficial branches of the femoral artery, about half an inch below Poupart's ligament, and about an inch from the main body of the femoral artery, which had caused a false aneurism. The sac contained about three ounces of blood. No other artery appeared to have been wounded. A considerable quantity of sero-purulent fluid was found in the abdominal cavity, and patches of acute inflammation were observed on the intestines. The peritoneum adjoining the wound of the operation was inflamed. It had not been injured by the knife. The ligature had been properly applied to the external iliac artery. The abdominal viscera were healthy, but loaded to an extraordinary degree with fat. There was some enlargement of the right limb, apparently no mortification. The femoral artery was pervious. The blood in the aneurismal sac was firmly coagulated, and there was no mark of recent oozing from the injured artery. The ball had passed immediately over and along the course of the artery for about half an inch before dividing it. The artery, although not actually detached, would not have borne a ligature.

That a vessel of this class, the author remarked, should have bled so furiously, in the first instance, could not have been anticipated. Having done so, one can so far understand the active pulsation and rapid extension of the tumour. It was, of course, quite impossible to determine whence the blood flowed into the aneurismal cavity. The principal vessel going to the limb might

have been wounded, or some considerable branch. A small branch, divided close to the principal vessel, poured out blood furiously, as much so as if an opening in the coats of the artery itself were made by a portion being punched out, corresponding in size to the area of the branch. The division of a small branch at a distance from the source from which it springs is of little importance. It contracts, and soon ceases to bleed; but when it is divided close to the trunk, blood issues from it, as it would if an opening, equal in size to the calibre of the little branch, were made in the trunk itself.

The author noticed the risk of secondary hæmorrhage, in these cases, in order to show that some active measures were required to arrest the threatened danger. He objected to the operation of opening the sac, and securing the wounded vessel by ligatures, as patients who have lost a great quantity of blood are often sunken and lost by the sudden effusion of even a small quantity, and, after adducing some cases in point, he remarks that the danger must be enhanced when the tumour is so placed that there is no possibility whatever of making pressure on the trunk of the artery on the proximal side of the opening into it, or at the origin of a branch wounded close to where it is given off, as in the case of Mr. Seton. The cyst could not have been opened without great loss of blood, and it was not likely that a ligature on the branch would have permanently arrested the bleeding; indeed, it was stated by Dr. Allen that the trunk would not have held a ligature.

The author having asked, whether there is anything to bear a surgeon out in adopting this practice, adduced a number of cases to show that vessels bleeding outwardly, or pouring their contents into the tissues of a limb or region, have become permanently closed in consequence of the flow of blood being intercepted and weakened for a time by the application of a ligature upon the principal arterial trunk. A man, thirty years of age, was wounded by a musket ball, which entered the left groin, and passed through the inside of the thigh. On "the tenth day from the injury, the slough from the anterior wound came away, and was followed by so frightful a hæmorrhage as to leave no doubt whence it proceeded, nor, from the wound being so high up, any alternative as to the means to be adopted for stopping it." The external iliac was tied, but the patient died of fever. No account is given of any dissection of the parts. "In this case the necessity of the operation is evident, and, as far as it went also, its success. Not a drop of blood was lost after it." So says Mr. Guthrie, who, it is to be presumed, conducted the treatment of the patient. We are left to conjecture what vessel was wounded. It may have been a branch, as likely as the trunk, and those who have attended to the description of the hæmorrhage in the case of Mr. Seton—to its impetuosity and amount,—will bear the author out in this assertion.

The author observed that he has endeavoured to show: 1st, That the case of Mr. Seton was one of great and immediate danger; 2nd,

That some decisive step was required to be taken, and that without a day's delay; 3d, That very great risk would have been incurred in attempting to put a ligature on the wounded vessel; 4th, That there was ample authority for adopting the step which was had recourse to in the case. The dangers likely to arise from the operation were considered as weighing but lightly in the scale against those impending from the effects of the pistol shot. Inflammation of the peritoneum was scarcely taken into account in consulting on this case. Out of the forty-five cases of this operation, collected by Mr. Crisp, nine, or one-fifth, died, but not one of peritoneal inflammation.

Mr. Arnott observed, that though it was his opinion that the principle in surgery, that an artery should be always secured at the seat of injury, he thought in this particular case Mr. Liston had fully made out the correctness of his practice. Mr. Liston did not see the patient until ten days after the receipt of the wound, at which period an aneurism had formed, and it was impossible to apply pressure to the artery above the wound. The question of practice generally in cases of wounds of arteries had not been opened by Mr. Liston, but he had confined himself to the details of this special case; and he, Mr. Arnott, could only repeat that, as much blood had been lost, and the patient was rapidly sinking, Mr. Liston acted in the most advisable manner.

Mr. Quain observed, with respect to the management of the case, that the whole subject resolves itself into two questions;—The first question being, was the operation necessary? On this point, he directed attention to the fact that, exclusive of Mr. Liston, other surgeons of experience and eminence in the naval service, had been engaged in the treatment of the case. Dr. Mortimer, a man of long experience in the public service, and other surgeons, were unanimous as to the necessity of the operation. They had watched the case, and, to say the least, it must be hazardous for others, who had no personal acquaintance with the condition of the patient, to call in question their judgment.

Then, as to the second question; namely, the operation being necessary, was the one performed the best suited to the circumstances of the case? On this point he entirely concurred in the view taken by Mr. Arnott. But it has been said that the vessel wounded was, after all, a "trumpery" one. To this it is answered, that it was impossible to determine by dissection what artery was actually wounded. It has been shown too that in some cases, and under peculiar circumstances, arteries of small size have bled profusely, so as even to cause death. He himself had made reference in a published work to a case in which hæmorrhage from a small vessel wounded in an operation had been fatal. Mr. Stanley once told him that he had known a person die from the division of a small branch of the epigastric artery in an operation, as well as he remembered, for strangulated femoral hernia. And another similar case is recorded. Moreover, it should be remembered that,

in the case under consideration, profuse hæmorrhage is stated to have occurred; and a repetition of hæmorrhage was believed to be imminent. He concluded by observing, that under all the circumstances of the case as they are now before the society, he expressed the opinion that the operation performed was, notwithstanding the result, the right one.

Medical Gazette, April 24, 1846, *p.*740.

132.—*On the Diagnosis of Aneurism.*—By T. P. Teale, Esq., F.L.S., Surgeon to the Leeds Infirmary, &c.—[Recent events have no tendency to increase our confidence in the diagnosis of aneurism. Dr. Kerr and Dr. Engelhardt have lately erred in their diagnosis. Perhaps it arises from too great reliance being placed on one or two diagnostic signs, such as a *diastolic* impulse felt in all parts of the tumour, and a diminution in its size, when either it, or the artery on its cardiac side, is compressed. The former symptom occurred in a malignant tumour of the foot—described by Dupuytren, and the latter in a pulsating tumour of the femur, lately under the care of M. Nelaton. Mr. Teale adds]

In a case, under my own care, of a large serous cyst of the neck, extending downwards behind the clavicle to the vicinity of the large vessels, there was such a strong and apparently distensile impulse perceptible in all parts of the tumour, as to induce myself and several other surgeons, for a considerable time, to regard it as aneurism. In this case, the hands applied to the sides of the tumour were forcibly separated at each pulsation; and, by compression, the tumour was diminished in size, (undoubtedly from a portion of its contents being forced below the clavicle towards the chest,) and when the pressure was discontinued, the tumour gradually resumed, by pulsatile stages, its original size. Hypertrophy of the left ventricle, and dilatation of the abdominal aorta, tended still further to obscure the case. After the tumour had been reduced in size, its true character became apparent.

The exploratory puncture, hitherto regarded as a test of aneurism, can no longer be received as such, since I have shown that a malignant cysto-vascular tumour of the femur, on two occasions, after an exploratory puncture, gave issue to a pulsatile column of florid blood, which was projected to the height of several inches.

Mr. Teale's Retrospective Address, Provincial Medical Transactions, Vol. 2, *New Series, p.*94.

133.—*Hæmorrhagic Diathesis—ten days Hæmorrhage after the Extraction of a Molar Tooth.*—By Dr. Clay, of Manchester.—[This patient, a boy fourteen years of age, was found by Dr. Clay, labouring under profuse hæmorrhage in consequence of the extraction of the third molar tooth of the upper jaw; the gums and cheek were very much lacerated; various styptics had been applied, as N. of myrrh F. ferri mur. arg. nitrat, &c., without stopping it. Dr. Clay used matico, secale, Ruspini's styptic, and even the

actual cautery, without the slightest benefit. Constitutional treatment alone remained, and, in consultation, it was decided he should take the following mixture:]

℞. Plumbi. super. acet, ʒss; acid. acet. dil. ℥ss; syr. rhead. ℥ss; mist. camph. ℥v. M. ft. mist. ℥vi. Sumat æger coch. magn. duo omni tertia hora.

Thus, five grains of the acetate of lead were given every three hours, or nearly so, in addition to which pads, saturated with the liq. plumbi. diacet. were applied to the bleeding surfaces, with as correct a pressure as possible. Twenty-four hours passed under this treatment without improvement. At a second consultation with several gentlemen, in addition to whom Mr. Bamber, a retired practitioner, and formerly the medical attendant of the family, was present, it was agreed to persevere with the acetate of lead mixture until the day following, continuing also the pads of lint saturated with the liq. plumbi. diacet., covering the pads also with finely pulverised matico. On the following morning, much to the satisfaction of all parties, the bleeding was checked; this was the tenth day, and up to this time he had taken nearly a drachm of the acetate of lead. The boy began to complain of pain in the stomach and head; it was therefore evident we could not proceed further with the acetate; and as the bowels had not been moved since its exhibition, it was determined to substitute the sulphate of soda, which the American physicians speak so highly of. A saturated solution was ordered to the extent of a wineglassful, every four hours, and in a very short time the bowels were acted upon. The bleeding was perfectly arrested from the tenth day, great care being taken for some time in removing the pads, and which were for several days moistened with the liq. plumbi. diacet. I have omitted to mention that the head was shaved when the constitutional treatment commenced, and that evaporating lotions were kept constantly upon it. From the tenth day the boy very gradually recovered, though extremely reduced. He is now (December 29th) comparatively well, and all the soft parts of the mouth are perfectly healed.

The case is an instructive one, as it serves to show how very little dependence can be placed on styptics, or, indeed, on any local application; in cases of hæmorrhagic diathesis, constitutional treatment alone is the best, indeed, the only, mode by which we can hope for permanent advantage.

Medical Times, Jan. 10, 1846, *p.* 293.

134.—*On Pulsating Tumours of Bone.*—By T. P. TEALE, Esq., F.L.S., Surgeon to the Leeds General Infirmary.—[These tumours so nearly resemble aneurisms that they are liable to be mistaken, even by the most eminent surgeons; they have, indeed, been named osseous aneurisms. M. Dupuytren regards them as accidental

development of erectile tissue, generally implicated with the cancerous element. He has recorded many of these cases. Mr. Teale observes:]

A case of pulsating tumour of the ilium, supposed to be aneurism, recently occurred at St. Bartholomew's Hospital. Mr. Stanley describes the tumour as pulsating throughout its whole extent; not with a thrill or vibration, but with a deep heavy beat of aneurism; and a bellows-sound was distinctly audible. A ligature was applied to the common iliac artery. The patient died on the third day, from peritonitis. The tumour, on dissection, was found to be composed of a spongy tissue, with cells and convoluted vessels distributed through it. In the wall of the left ventricle there was a medullary tumour, of the size of a filbert. After relating the case to the Medico-Chirurgical Society, Mr. Stanley alluded to several others, in which tumours originating in the bones had been mistaken for aneurism. Two such had occurred at St. Bartholomew's Hospital: one was an encephaloid tumour of the humerus; the other a morbid growth, consisting of a soft fibrous and dense osseous structure, originating in the femur, and supposed to be popliteal aneurism. Mr. Stanley also referred to a case of great interest, which had occurred to Mr. Guthrie. In this instance, a medullary tumour, situated in the gluteal region, presented so decidedly the characters of aneurism, that it was regarded as such by Sir Astley Cooper and other surgeons, and accordingly Mr. Guthrie applied a ligature to the common iliac artery.

Intimately connected with this subject, but not coming within the designation of pulsatile tumour, is a case which recently fell under my own care. A young man presented himself at the hospital, having a tumour which filled the popliteal space and projected a little anteriorly above the inner condyle of the femur. It was generally firm, but elastic in some parts, and conveyed a suspicious feeling of the presence of deep-seated fluid. No pulsation could be detected in it, nor was its size altered by compressing the femoral artery, and no unnatural sound was audible. I determined upon making an exploratory puncture, which being done, a pulsatile column of florid blood was projected to the height of seven or eight inches. On the following day, in consultation with my colleagues, Mr. Smith and Mr. Hey, the puncture was repeated in another part of the tumour, when a pulsatile column was again projected, and several ounces of florid blood rapidly escaped. Notwithstanding this phenomenon, we were inclined to the opinion that the disease was one of the more vascular forms of carcinoma; but we nevertheless thought it prudent to tie the femoral artery, but with no other effect upon the tumour than the arrest of its growth for about a fortnight, after which time it rapidly increased and attained an enormous size. The patient could not be induced to submit to amputation. After death, which occurred four months after the ligature was applied, the tumour was found to consist of

numerous cysts, many of which were filled with imperfectly coagulated blood, others with turbid serum, and in some parts masses of encephaloid carcinoma were seen.

Provincial Medical Transactions, Vol. 2, N. S., p. 72.

135.—*On Hæmorrhage from Wounded Arteries.*—By J. G. Guthrie, Esq., F.R.S., &c.—I do not hesitate in considering the following as three important facts, first demonstrated and proved during the war in Portugal, Spain, and France, and that nothing has since occurred to impeach their accuracy.

1. That an artery as large as the femoral is capable, when divided, of taking on certain processes, which will cause a suppression of hæmorrhage from its upper end, and which suppression is usually permanent.

2. That the bleeding from the lower end of the same vessel is less certainly and less permanently restrained, and not by exactly similar processes; the blood issuing from the lower end of the femoral artery, being for the first few days of a venous colour. It is less so from the axillary artery, in consequence of the collateral circulation in the upper being more free than in the lower extremity, and the change of colour is sometimes not perceptible in the smaller arteries of the forearm, although it is generally so in those of the leg.

3. That this bleeding from the lower end of the vessel, which is more or less of a venous colour, and issues in a continuous stream, may be restrained by compression properly made on, and in the course of the lower part of the wounded artery; but that in no instance should recourse be had to a ligature on a distant part of the artery above the seat of injury, until every other possible effort to arrest the hæmorrhage has failed.

Medical Times, April 25, 1846, p. 54.

ORGANS OF RESPIRATION.

136—ON TRACHEOTOMY.

By R. Carmichael, Esq., Dublin.

[Mr. Carmichael has presented to the Pathological Society of Dublin, the trachea and larynx of a child, two years of age, in whom he performed this operation. The child had inhaled the steam from the spout of a boiling tea-kettle, and Mr. Carmichael sent him to the Richmond Hospital, in order to afford to the little sufferer a chance of life, by performing the operation of tracheotomy upon him.]

Mr. Carmichael remarked, that this operation is very difficult to perform on a child, the trachea being constantly in motion, and the part in which the opening is to be made having the thyroid gland just above and the thymus immediately below it, while it frequently happens that there are also large branches of vessels passing across in front of the trachea. The best mode of operating is to lay hold of the trachea, when exposed, with a strong hook, and having then drawn it forward, cut out a portion with a pair of scissors. There is another mode of operating with an ingenious instrument recently invented by Mr. Milliken, by means of which the operator can, at the same moment, both fix and hook the trachea, and then, by pushing forward the instrument, can cut out a circular portion of the cartilaginous rings, Mr. Carmichael mentioned that he had twice before performed tracheotomy with success, in cases similar to the present. In one of these, which had occurred some years ago, he had the assistance of Mr. Adams and Mr. Smith, and so complete was the recovery in that operation, that the patient's voice was not injured, and he is now a distinguished member of the choir of Christ Church Cathedral in Dublin. In the present instance, the boy lived but twelve hours after the operation. In the examination after death, it was found that the glottis was closed, and the arytenoid cartilages were covered with lymph; the lungs were sound, no blood was lost during the operation. Besides the recent specimen there was on the table, a coloured cast of the parts, made by Mr. R. W. Smith, representing accurately the appearances immediately after death.

Mr. Carmichael produced to the meeting, and described, the instrument for tracheotomy to which he had alluded, being an improvement upon that originally invented by Mr. Read, in whose instrument the cutting part was in the same plane with the axis of the handle, in consequence of which formation the depth at which the trachea lies below the external incision, would not permit the instrument to be so used as to excise any portion of the trachea. In the instrument shown by Mr. Carmichael, the cutting part forms a curve or obtuse angle with the handle, a construction which obviates the objections to the former instrument. The ease with which this cut out a circular portion of the rings was demonstrated to the meeting, on the trachea of a sheep. Mr. Carmichael recommended this instrument to the notice of the profession.

Dublin Quarterly Journal of Medical Science, May, 1846, *p.* 508.

137.—*Tracheotomy in acute diseases of the Larynx or Trachea.* —M. Trousseau has recorded the results of his experience in 121 cases of croup, in which tracheotomy was performed. He advocates the rather early performance of the operation. During the operation, if he finds it impossible to avoid the thyroid veins by careful dissection, he divides them without tying, since the hæmorrhage always ceases on the introduction of the canula. As soon as he has completed the incision into the trachea, he intro-

duces an instrument to keep the edges of the wound apart, raises the child from the recumbent posture, and waits for a few moments until the hæmorrhage ceases. He then, if the case is very urgent, introduces the canula; if the symptoms are less pressing, he allows the dilator to remain for some time, in order to afford opportunity for the expulsion of the false membranes, while he further endeavours to favour their discharge by dropping water into the bronchi, and by sponging out the trachea repeatedly. After a time the canula is introduced, and often as the respiration becomes difficult, it must be removed, if there be any reason for referring the dyspnœa to any obstruction of the tube. Usually it is sufficient to change the canula twice in twenty-four hours. At the time of withdrawing the canula the dilator should be employed; and while the edges of the wound are thus kept apart, the trachea should be sponged out, and the medicated applications employed. In the course of two or three days, the use of the dilator becomes unnecessary. If the case should advance favourably, the same sedulous care to keep the canula free becomes unnecessary after the fourth or fifth day; and if the air should appear to pass at all by the larynx, the canula may be incompletely closed by a plug of cork. If respiration still go on well, the size of the tube may be reduced every day, until it is finally removed, usually from the tenth to the thirteenth day. M. Trousseau attaches great importance to the use of local remedies. These consist in dropping into the air-passages from fifteen to twenty drops of a solution of about five grains of nitrate of silver in an ounce of water, and at the same time cleansing the trachea with a sponge dipped in the same solution.

The results, however, of his treatment are by no means brilliant. M. Trousseau has operated in 112 cases, in twenty-seven of which the patients survived; it cannot, however, be fairly assumed that the life of the patients in all these cases would have been sacrificed but for the operation, provided active treatment of the ordinary kind had been employed.

Provincial Medical Transactions, Vol. 2, N. S., p. 109.

138.—*Case of Laryngotomy.*—By J. F. Crookes, Esq.—[An interesting case of œdema of the glottis, successfully treated by laryngotomy, is reported in the *Medical Gazette.* The patient was a female confined in Bridewell, who swallowing some bread, a portion of unmasticated crust lodged in the œsophagus, which gave her great uneasiness, and induced her to put her fingers down her throat, to endeavour to remove it; this she accomplished, but remarked that in doing so either the crust or the fingers had torn some flesh in the throat: difficulty of breathing ensued, which after a lapse of a few hours, threatened suffocation; the face was very livid, and a comatose state speedily supervened. Mr. Crookes at once decided upon the operation, and describes it as follows:]

I performed the operation of laryngotomy a little before noon.

It was done without much difficulty, although the shortness and fatness of her neck made her an unfavourable subject for the operation. After a free incision of the integuments had been made, the loose cellular tissue was readily torn through with the fingers, and the crico-thyroideum membrane reached. The distended thyroid veins were easily avoided, and the whole amount of hæmorrhage was trifling. Whilst the membrane lay clearly exposed between the tops of my fingers, Mr. Holding punctured it at my request, but the opening thus made was very small, and the quantity of air admitted was insufficient. As the lividity of the face, however, appeared slightly to diminish, I deemed it prudent to await the arrival of the proper tubes, meanwhile carefully commanding the opening with my fingers. As soon as the tubes were brought, I enlarged the opening, and introduced one, and within a second or two afterwards the lividity of the face entirely disappeared, and the poor woman was restored to perfect consciousness.

[A few days after the operation, a very small quantity of air passed through the wound and this principally on coughing. Slight pain in the chest supervened, which was removed by the application of a blister, and in nineteen days after the operation the wound was nearly healed.]

Medical Gazette, Nov. 28, 1845, *p.* 1342.

139.—*Case of Hanging treated successfully by the Affusion of Cold Water.*—[This case is reported by Mr. Noyce,in the *Medical Gazette* for January 9th. It appears that the patient had been suspended at least *two minutes*, and respiration had ceased six minutes, before attempts at resuscitation could be made. The heart's action continued, but was very weak; pulse 80, countenance pale, conjunctiva red.

Mr. N. attempted to perform artificial respiration, but the pair of bellows were so much out of order, that he could not effect his object. He then determined on the application of cold water, and describes its effects as follows:]

On the first affusion I perceived a gurgling in the throat, and renewed the operation; a slight inspiration directly succeeded. The affusion was frequently repeated, and was followed each time by an inspiration, each more perfect than the last, until the lungs were fully inflated; respiration then continued regularly, accompanied by frequent yawning and sighing.

I bled him to 16 ounces, which restored him to consciousness, and he has had no bad symptoms since, excepting a severe pain at the back of the neck, which shortly passed off, and he remains quite well.

Medical Gazette, Jan 9, 1846, *p.* 75.

ALIMENTARY CANAL.

140.—ON THE OPERATION FOR HARE-LIP.

By T. P. Teale, Esq., F.L.S., Surgeon to the Leeds Infirmary, &c.

[M. Malgaigne has lately modified the operation for hare-lip, by which he prevents the unsightly fissure left by this operation. He cuts in the ordinary manner from above downwards, but stops before he has detached the cut piece; he does the same on the opposite side. After uniting the two margins of the cleft in their whole extent, except towards their free borders, the flaps, formed as above-mentioned, are approximated face to face, and the operator so far shortens them as to prevent a furrow. Mr. Teale observes that]

Mr. Smith, of Leeds, has occasionally adopted a modification of M. Malgaigne's operation with the greatest success. He makes his incision from above downwards, in the ordinary way, as far as the red margin of the lip, through which part he cuts, by directing the incision towards the median line, so that the inferior part of the incision forms nearly a right angle with the upper portion. I have lately operated in this manner. By this modification of the operation for hare-lip, a much more symmetrical lip is formed than is usually observed after the ordinary mode of operating.

The *age* for performing the operation in cases of congenital hare-lip, has formed the subject of a communication to the Royal Academy of Medicine, by Professor Dubois, who advocates an early operation, and has brought forward several cases in support of the proceeding. The patients were subjected to the operation at the following ages:—Three on the second day after birth; one a few days after; one on the fifth; and one on the fifteenth. Four of the infants were allowed to take the breast; two were brought up by the hand; all the cases were successful. M. Dubois states, that if the child be sickly, and the hare-lip complicated with division of the bones, the operation ought to be deferred; but that when the child is strong and healthy, and the fissure only affects the lip, it ought to be performed early.

Professor Roux said, that it would be unfortunate if, on the authority of Professor Dubois' name, it should be concluded that the operation ought to be performed early in every case. The facts recorded by him are relative to simple uncomplicated hare-lip, and in this respect M. Roux coincided in a great measure with him, although he is always fearful of dangerous results consecutive to operations in very young children, the more so, as he has witnessed several which terminated fatally.

Mr. Liston recommends that the operation be deferred until the first set of teeth have appeared. "When the features are enlarged somewhat," he observes, "you have more ground to work upon;

you can then put the parts neatly together, and you can almost answer positively for the union taking place."

Provincial Medical Transactions, Vol. 2, N.S., p. 84.

141.—*Observations on Cleft Palate and on Staphyloraphy.*—By W. Fergusson, Esq., Professor of Surgery in King's College, London.—[In Retrospect, Vol. XI., p. 146, will be found a short account of this operation. But we think that its importance entitles it to a second and more complete notice in our pages, which we take from Mr. Fergusson's paper, lately published in the *Medico Chirurgical Transactions.*

The observations of Graefe and Roux in Europe, and Warren in America, first showed that this congenital deformity may be treated on the same principles as the management of hare-lip. It was first done in England by Mr. Alcock, in 1821, but the amount of experience is not as yet in just proportion to that acquired by surgeons in other parts of the world. Mr. Fergusson observes that:]

The fissure in cleft palate may be such as only to divide the uvula, or it may extend forwards through the soft and hard parts as far as the lips, in which latter instance there is generally a hare-lip as well. In the uvula, soft palate, and even through the palate bones, as also a portion of the superior maxillæ, the fissure is invariably in the mesial line, but when the alveoli in front participate in the malformation, it is somewhat to one side. In certain instances the fissure is double in front, when the whole of it may be likened to the letter Y; the two lines in front leaving between them the intermaxillary bone.

I shall only advert to the advantages which may be obtained in instances of single or double fissure extending through the entire hard palate, and when accompanied with hare-lip, by the judicious application of compresses, and also by the early performance of the operation for hare-lip It is well-known that a gap, however wide, may, if treated in early life, be brought to the condition of a narrow chink, by the means alluded to; but we have no control over the fissure in the soft parts, save an artificial palate, unless by the operation of staphyloraphy.

[It is only of late that it has been thought possible to remedy the cleft in the hard palate, except by plastic operations, succeeding the union of the soft parts. Dr. Warren says that it may be closed in the same way as the soft velum; his observations, however, have been but little noticed in this country. With respect to this, Mr. F. remarks:]

The remarkable feature in this gentleman's operation is, that he dissects the soft tissues from the bones on each side of the fissure, carrying his knife towards the alveoli to such an extent as to make a flap sufficiently broad to join its fellow in the mesial line; he then pares the edges of the cleft in the soft palate, and stitches the whole wound between the uvula and the anterior extremity,

wherever it may be. If union takes place, the entire fissure is closed, and Dr. Warren has not alluded to any inconveniences or evil results from thus denuding the bones. Doubtless a considerable amount of reunion takes place, and towards the inner margins of the bones, as also on the upper surface of the soft portion in the middle, there will be a cicatrix, analogous to mucous membrane. Taking the vault of the hard palate in its natural condition, as being nearly semicircular, it is evident that by bringing down the soft parts on each side towards the tongue, ample flaps may be obtained, so that there would be little or no dragging by the stitches. In the cleft condition, this proposition is still more apparent, especially if the malformation extends through the alveoli, for then the surfaces of the hard palate slope upwards like the two sides of a triangle, and nearly join in the floor of the nostril.

[Before adverting to the incisions necessary in this operation, Mr. Fergusson notices the movements in the soft flaps of those persons whose palate is cleft. He says:]

As we look into the open mouth, the flaps may be seen under four different conditions. First. If the parts be not irritated in any way, the gap will be quite conspicuous, the lateral flaps will be distinct, and the posterior nares, with the upper end of the pharynx, will be observed above and behind. Second. If the flaps be touched, they will in all probability be jerked upwards by a motion seemingly commencing at the middle of each. Third. If the parts be further irritated, as by pushing the finger against them into the fissure, each flap is forcibly drawn upwards and outwards, and can scarcely be distinguished from the rest of the parts, forming the sides of the nostrils and throat. And, fourth. If the parts further back be irritated, as in the second act of deglutition, the margins of the fissure are forced together, by the action of the superior constrictor muscle.

All these conditions and movements are, in my opinion, very readily accounted for. In the first instance, the parts may be deemed in a quiescent state; in the second, the levatores palati are called into play, and move the flaps as described; and in the third, these muscles act still more forcibly, and the palato-pharyngei will join in drawing the parts outwards. The fourth condition I need not again describe.

If the free margin on one side of the fissure be seized with the forceps, drawn towards the mesial line, and the flap be then irritated, it will be drawn upwards and outwards with remarkable force; this movement, it is evident, can only be effected by two muscles, the levator palati and palato-pharyngeus. These muscles, then, I consider the chief mechanical obstacles to the junction of the margins in the mesial line. Hitherto I have taken no notice of the action of the circumflexus, or tensor palati. I am inclined to think that its action is very limited, and, probably, as the dissec-

tion in my possession would indicate, is greater upon the parts outside the posterior pillar, than on those contiguous to the fissure. Neither have I alluded specially to the action of the palato-glossus, because, though it might with a feeble power incline the soft palate downwards, its influence, as regards the practical view I am now taking, is completely counteracted by the more powerful muscles connected with the palate above.

[Mr. F. next remarks on Mettauer's operation, and thinks the long incision through the mucous membrane, will not answer, inasmuch as it does not reach any muscular fibres of importance. The same objection he also makes to the incisions of Dieffenbach and Pancoast. Liston's, he thinks, has no reference to the division of muscular fibres at all, and Roux's method, although it removes some muscular fibres, is not sufficiently effectual. Dr. J. M. Warren does not divide any of the muscular fibres, he only separates the tonsil from the posterior pillar. Mr. Fergusson then remarks that:]

So indefinite has been the language used by all parties, with reference to the object of these different incisions, that I believe myself justified in stating that a distinct proposal, founded on anatomical and physiological data, has never yet been made.

I propose, as an important accessory to the operation of staphyloraphy, that the surgeon should, on strictly scientific grounds, and in accordance with the modern principles of myotomy, so conduct his incisions as to destroy all motory power in the soft palate for the time being, and thus permit that repose of the stretched velum which is so essential to a happy result; in other words, I advise the division of the levator palati, the palato-pharyngeus, and the palato-glossus muscles. The first of these steps I deem of the greatest importance, the second scarcely less so, and the third may be effected or not, as the circumstances seem to demand.

It will be observed that, by dividing the above-named muscles, all motory influence in an outward, upward, or downward direction, is cut off, and the only muscles which can act in anything like a direct manner upon the soft palate are the superior constrictors of the pharynx. These, however, will only act during deglutition, and even then, their tendency will be to throw the parts closer instead of separating them.

[These fibres re-unite and leave no inconvenience; indeeed, the incisions necessary for their division, are less than those already practised. Mr. Fergusson describes his operation thus:]

The steps which I follow are these;—With a knife whose blade is somewhat like the point of a lancet, the cutting hedge being about a quarter of an inch in extent, and the flat surface being bent semi-circularly, I make an incision about half an inch long, on each side of the posterior nares, a little above and parallel with the palatine flaps, and across a line straight downwards from the lower opening of the Eustachian tube, by which I divide the levator palati

muscle on both sides, just above its attachment to the palate. Next I pare the edges of the fissure with a straight blunt-pointed bistoury, removing little more than the mucous membrane; then, with a pair of long blunt-pointed curved scissors, I divide the posterior pillar of the fauces, immediately behind the tonsil, and, if it seems necessary, cut across the anterior pillar, too; the wound in each part being about a quarter of an inch in extent. Lastly, the stitches are introduced by means of a curved needle, set in a handle; and, the threads being tied so as to keep the cut edges of the fissure accurately in contact, the operation is completed. These different incisions may be made in the order here detailed, or possibly it may be found most convenient to divide the palato-pharyngeus first, next the levator palati, and then to pare the edges when the muscular action has been taken off.

Each of these steps requires some little separate notice. The first incision, it will be remarked, differs from all others hitherto proposed, and is founded on consideration of the anatomy of the parts. The levator palati, I have no doubt, is the main obstacle to the approximation of the margins, and is the principal cause of unsteadiness in the velum during the operation and after it has been accomplished. Its division may be effected through the method above recommended, but should the flap appear tense after the knife has been used, the incision may be further extended in case the muscle may not have been completely cut across. The extension of the incision, even without reference to the division of muscular fibres, will aid greatly in relaxing the sides of the palate. In many instances, I believe that the levator muscle might be divided by a submucous incision, by plunging the blade through the mucous covering, and then moving it freely across the muscle.

The instructions already given, will, I imagine, enable the operator to reach the muscle with facility. I may add, however, that the incision should be made about midway between the hard palate and the posterior margin of the soft flap, just above the thickest and most prominent part of the margin of the cleft. The instrument used for this step is of peculiar construction. No ordinary surgical knife could have readily effected the purpose, as it is scarcely possible to apply the point of a common scalpel or bistoury to the part in question, excepting through the nostril in front, a proceeding which, in my opinion, would not answer so well as that recommended. The idea of this shape of knife was first suggested to me by a perusal of Dr. J. M. Warren's description of his mode of dealing with the hard palate. I use a variety of blades with long and short curves, each to suit the particular condition of the parts, and believe that these will be found the most convenient instruments for separating the soft tissues from the hard vault, according to Warren's process: indeed, I know of no others used among surgeons in this country, which could effect this purpose. In paring the edges I am indifferent as to which side I begin with. If it be the right side I usually stand behind the patient,—a

favourite attitude with the dentist, and commence to cut either at the end nearest me, or that furthest off, as may seem most convenient. Still standing behind, with the patient's head on my chest, I pare the left side from before, backwards, or the reverse, as may appear best; or, possibly, I may conduct these steps while standing in front of the patient, whose head is supported by an assistant; but I believe that it will be found very advantageous to conduct many of the steps of the operation while standing behind andlooking over the face, as it were, into the mouth. In any way, if the incisions on the edges are begun at the uvular extremity, something must be done to keep the parts steady and tense, else great difficulty will be experienced in carrying the knife along. I prefer a long narrow forceps, with the blades having hook-like extremities, and either pull the points towards me or push them back, as may seem most advisable. I give preference to a straight probe-pointed bistoury, as the best instrument for this part of the operation. When the edges are pared, I am in the habit of again using the curved knife which has just been described. The edge at some parts will appear so thin that one may doubt whether union is likely to take place when two such surfaces are brought into apposition. To increase the breadth or depth of such parts, I run the point of the curved blade along the middle of the cut surface, and thus, when the edges are brought into contact, they are expanded, and the depth from the nasal surface to the lingual is increased, whereby there is greater probability of union. I have succeeded in this way in closing a portion of a gap where the edges were originally not thicker than a sixpence. In dividing the pillars of the fauces, the uvula, or the posterior margin of the velum, should be seized with the forceps, and so drawn forwards as to put these parts on the stretch. The relaxation of the flaps will be the criterion as to the muscles being divided. Judging from the anatomy, and what I have seen in the living body, I should say that it will seldom be necessary to meddle with the anterior pillars.

After having used or examined most of the contrivances for passing the threads, I give decided preference to the curved needle set in a handle, the eye being near the point, so that the thread may be seen and laid hold of readily as soon as the parts have been transfixed. The first three or four stitches I now always introduce thus:—I pass the curved needle from below, straight upwards, being indifferent as to which side I begin with. And then, having carried the eye towards the mesial line, so that the ligature can be seized with the forceps and drawn down into the mouth, the needle is withdrawn, armed again with a more slender thread, and the same steps are repeated on the opposite side of the cleft. The thread last introduced is next fastened to the first, and then drawn back throughout its course, whereby the first thread, which is the one intended to close the gap, is brought into its proper position. After three or four stitches have been tied, should more be required, the curved needle can readily be pushed from one side to the other.

I imagine that the difficult process of introducing the threads, is greatly facilitated by the preliminary division of muscles which I recommend. Having, on some occasions, when the ligatures had been introduced before the edges were pared, (the course followed by Roux), experienced annoyance from the threads being cut during the subsequent steps, I advise that they be not applied until the margins have been cut. A stout silk or flaxen thread is, in my opinion, preferable to the ligatures of leaden wire used by Dieffenbach, although these have been much applauded by some; and the surgeons' knot, as advised by Professor Smith, of Maryland, and Dr. J. M. Warren, I have found sufficient to keep the wound close, until the second noose had been cast. The difficulty of keeping the first noose steady, has often been alluded to: the lead ligatures, by being twisted together, obviate this difficulty; and, recently, Sir Philip Crampton has proposed a most ingenious device for closing the stitches, which consists in running a small perforated bead of soft metal up along the two ends of the thread, which, when the gap is closed, are than fixed by squeezing the metal. I think, however, that the surgeons' knot answers all the purpose desired; and, in my own operation, there is so little dragging, in consequence of the flaccid condition of the palate, that I have occasionally found the common knot answer perfectly. For the same reason, too, I have not thought it necessary to resort to the use of any of those pieces of mechanism intended to facilitate the tying of a knot in a deep-seated part; for, after the muscles of the palate have been divided, the soft flaps can be drawn downwards and forwards, with all requisite facility. I believe it better, rather to exceed the proper number of stitches than to have too few, and I especially recommend that a stitch be used close to the lower end of the uvula, as otherwise there is here a great tendency to separation.

The after treatment which I pursued, has been much the same as that recommended by Roux and most others. The patient has been desired not to speak or swallow for the first two or three days; the stitches have been removed, some on the second day, others not till the third, fourth, or sixth, as seemed most advisable; and generally the treatment has been conducted on ordinary principles. I have observed benefit from the use of enemata of gruel and strong soups.

Medico-Chirurgical Transactions, Vol. 28, *p.* 273.

142.—*On Dieffenbach's Operations on the Palate.*—[In a review of this celebrated surgeon's work on Operative Surgery, in the *British and Foreign Medical Review*, we have the following remarks on operations on the palate:]

In cases of small holes, or openings in both the soft and hard palate, Dieffenbach employs with great success a concentrated tincture of cantharides, with which the borders of the opening are pencilled several times daily. Inflammation and granulation of the

edges are followed by union, while if the potassa pura be used, a portion of substance is lost, and the granulation is not sufficient to close the opening, which remains larger than before. Larger openings are, of course, treated by paring the edges, and union by suture.

In closing fissures of the soft palate, leaden wire is said to be far preferable to silk, and much more easily applied. It can be drawn sufficiently tight to keep the wounded edges close together, while silk, if so drawn, would cut through those delicate textures.

Adhesion of the velum palati to the posterior wall of the pharynx, causes great suffering, from stopping the communication between the nares and air-passage, deafness from closure of the eustachian tube, &c., and therefore, although the operation is very difficult, the adhesions must be freed by means of a long scalpel, making a transverse incision, about half an inch below the adherent border of the velum. The edge is fixed by a hook, and drawn from the wall of the pharynx. Then a lancet-formed knife, the flat surface of which is curved, is used and directed upwards, to loosen the velum, the separation of which is completed by scissors, also curved upon their flat surface. The upper adhesions are destroyed by passing a blunt curved iron instrument, like a very small spatula, along the inferior nares. This operation would be rendered unsuccessful by a fresh adhesion of the parts together, unless sutures were applied. A ligature is prepared, with a small curved needle at each end, and with one of the needles the velum is tranfixed a few lines from its edge, and the needle brought out at a high point, on the anterior surface of the palate. The other needle is used in the same manner, the ligature being passed a short distance from the side of the other. Then the ends of the thread are tied together, taking care that the edge of the velum is left about half an inch distant from the palate.

As we have referred to Mr. Nasmyth's paper on the mechanical treatment of palatine fissure, it may be well to state that Dieffenbach considers that, in general, all mechanical means for closing openings, or fissures of the velum are not only useless, but injurious and dangerous. With regard to those of the hard palate, wearing any thing between the edges of the opening, gives relief for the time, but generally causes enlargement of the opening, so that if the size, or other circumstances, render an operation unadvisable, it is better to cover the palate with a gold plate fixed to the teeth. Of course this would be left to the dentist, but if no such person be in the neighbourhood, any mechanic could make such a plate, if the surgeon took a model of the palate in soft wax, harden this in cold water, and upon this make a cast in sulphur, or plaster of Paris. The gold plate, formed upon this cast, would form the artificial palate, and be fixed by gold wire around the back teeth.

In cases of holes in the palate, the edges of which are so callous that an operation would be unsuccessful or impossible, the opening

may be stopped by wearing a double piece of Indian rubber, without the danger of its enlargement. Two pieces of Indian rubber, of the thickness of thin pasteboard, are cut about four or five times larger than the opening, and between them, in the middle, a small round piece of the same thickness is laid, and these three layers are transfixed, and sewed together with waxed thread. One plate thus is made to lie on the anterior, the other on the posterior side of the palate, and the small middle strip in the openings, with the edges of which it is not in contact, as it is smaller than the opening. When the patient wishes to insert this obturator, he softens it in warm water, squeezes its layers together with a pair of forceps, and passes it through the opening, standing with widely-open mouth before a looking-glass. It is removed once a week to clean it, or to apply a new one. When the opening is so small that some hope of a closure remains, the edges should be pencilled with tincture of cantharides. We have lately applied this elastic obturator with most satisfactory result, upon a gentleman who had undergone three unsuccessful operations, by paring the edges and applying sutures. We took a model of the palate in wax, and upon this made a plaster cast. This saves a great deal of unpleasant manipulation in the patient's mouth, and an exact fit may be easily obtained. Our friend was quite delighted with the result, and his wife amuses herself by making the plugs, so that with the cast they are quite independent. It is really surprising how much happiness may be conferred upon a family by so simple a contrivance. How, then, can a man practice with a clear conscience who does not keep himself on a par with the knowledge of the age? We think it is Dr. Baillie who says, "In other professions ignorance may be *folly;* in ours it is *crime*."

British and Foreign Medical Review, April, 1846, *p.* 306.

143.—*New Instrument for dividing the Frænum Linguæ, and removing the Uvula.*—[Dr. Beatty lately offered for the inspection of the Dublin Surgical Society, two instruments for the above-named purposes. With regard to the instrument for dividing the frænum linguæ, he says,]

The instrument itself has a strong resemblance to the ordinary scissors; its blades, however, being perfectly blunt and curved, and not closing completely, thus leaving an interval sufficient to receive the frænum. This property of the instrument, then—viz., its power of elevating the tongue and stretching the frænum, Dr. Beatty considered, rendered it worthy of notice, for though this little operation is in itself a trifling one, yet life, he observed, is made up of trifles, and much is often gained by attention to lesser matters. The next instrument he had to exhibit displayed, he observed, much greater ingenuity, and is the invention of Mr. Carte, who, in order to have justice done to the instument, ought himself to have submitted it for the inspection of the society. It has been placed in his (Dr. Beatty's) hands by Mr. Millikin, by whom it

had been constructed. The instrument he looked on as an exceedingly ingenious contrivance for facilitating the removal of a portion of the uvula,—an operation which, though simple, is yet sometimes attended with difficulty, and occasionally with danger too, on account of the detached portion falling into or against the air-passages. This instrument, at the same time that it cuts the uvula, has a provision by which it secures the divided part, and thereby prevents the possibility of the inconvenience just alluded to; it consists essentially of a pair of scissors with blunt points, but in addition to the ordinary cutting blades, there are beneath these, attached by means of screws, a pair of blunt supplementary blades, whose flat surfaces come in contact with the substance of the uvula, and seize it while it is being detached by the cutting blades.

Dublin Medical Press, May 13, 1846, *p.* 290.

144.—*Removal of the Tongue by Ligature—New Process.*—A woman, aged thirty, apparently of good constitution, who had already been operated upon by M. Chassaignac, for cancer of the tongue—is the subject of the following narrative. In consequence of a return of the disease, she was re-admitted under the care of M. Blandin. On examination, it was discovered that the tumour occupied the anterior three-fourths of the right side of the tongue, and that it exhibited all the characters of cancer. In consequence of the difficulty that would probably have been experienced from troublesome hæmorrhage, M. B. preferred, for its removal, the ligature instead of the knife. The following is the method he pursued:—A needle, with a fixed handle, and of the shape of a small spatula, slightly curved in its flat surface, and with the eye near its point, was armed with two ribbon-shaped threads, the one white and the other black, so as to be easily distinguished from each other in the course of the operation. The white thread was passed through the eye in such a way as to leave its two ends of equal length; whilst the black thread was introduced but a short way, leaving one end much longer than the other. The needle thus armed was passed below the tongue, or between the latter and the floor of the mouth. The index finger was introduced, so as to serve as a conductor for the instrument, which was passed through the tongue in a direction from below upwards, and from before backwards, towards the healthy portion, that is to say, between the base of the tongue and the posterior edge of the tumour. On the point of the needle emerging on the dorsum of the tongue, the operator seized the thread by the loop, and drew it towards him; he then divided it with a pair of scissors, so that the thread, formerly in one, now formed two. These two threads, one end of which being under the tongue, and the other on its dorsal surface, were directed, the one from before backwards, the other transversly, and the ends tied in a firm knot, so that they thus constituted two ligatures, the one, antero-posterior, and the other,

transverse to the healthy limits of the disease. During these manœuvres with the double white thread, the needle still armed with the black thread was allowed to remain in its place; the operator now withdrew the instrument half through the thickness of the tongue, and pushing it anew caused the point to emerge at the left edge on a level with the base, where he seized the small end of the black thread. He then withdrew the needle entirely, and, by means of a knot, fixed the two ends of the thread round the inferior surface of the tongue. In this way, then, the tongue was strangulated in every direction, by means of three ligatures confined to the diseased portion, that is to say, one antero-posterior, a second transverse, a third horizontal to the inferior surface, and all this was accomplished by two threads, and two punctures of a needle directed in the same course in the form of the letter Y. This description, at first sight, may not be easily comprehended, but if followed out, with a needle in hand, it will be found ingenious, simple, and important; we have just repeated it on a fold of paper made so as to resemble the tongue; and thus a clear idea of it may be obtained. The three knots were fixed between the dental arches. On the third day, the tumour had become mortified; on this, the tenth day from the operation, the ligatures have not yet separated, the tumour is mortifying in the mouth, and the patient suffers much. Chlorinated washes have been prescribed.

In France, at this time, the generally admitted theory in regard to cancer, is, that it is a disease local in its origin. And thus the treatment is confined to the locality by means of cutting instruments or caustics; whilst the constitutional state is almost wholly overlooked. And what happens? In the course of a short time there is a relapse. An operation is again had recourse to, if this be possible, and so on after each new relapse, till the constitutional effect becomes evident. It is then said there is a cancerous diathesis, and the patient is declared lost. We have always protested against this mode of viewing the subject; and relying on the authority of celebrated men, and facts easy of verification, we have stated clearly the general therapeutical indications required in the different periods of such cases. Most practitioners, however, disrelish such reflections, and prefer wandering in blind routine, to adopting and applying the new dynamic views. This is very sad; for the question is one of life or death to a number of unhappy beings, who might be either saved, or at least, relieved. We consider it unnecessary to repeat the facts and reasons we have so often dwelt upon; surgeons do not believe them, have never tried them, and prefer doing nothing.—*Annales de Therapeutique*, Dec. 1845.

[From the next number of the *Annales*, (January, 1845), we find that the subject of the preceding case has made a good recovery.]

The portion included within the ligature has come away, the wound has healed, and no hardness can be felt either in the cicatrix or elsewhere. Nearly a third of the mass of the tongue has been removed. In consequence of the operation, the healthy portion of the tongue is now firmly adherent to the floor of the mouth, at the spot where the ligature was passed; its point is turned laterally towards the cicatrix, so that the organ, when lying in the mouth, has the appearance of the letter S: it is nearly immoveable. Its point, however, is free towards the extremity, and is capable of executing certain motions. Deglutition is not in the least impaired, but the voice has lost its clearness; the alteration in this respect, however, is not great, and the patient is too happy to be freed from her painful complaint, to pay much attention to these slight inconveniences, which will, no doubt, diminish with time. We know indeed, from many previous facts, that after removal of the tongue, the voice is, in the first instance, somewhat altered, but that it afterwards regains its clearness; in consequence of a particular modification which the larynx undergoes in its position, the organ rises with the pharynx, and the posterior stump of the tongue is carried forwards, and thus adapted to the purposes of deglutition and articulation.—*Annales de Therapeutiques*, Jan. 1846.

Monthly Journal of Medical Science, March, 1846, *p.* 206.

145.—*On the radical cure of Hernia.*—By T. P. Teale, Esq., F.L.S., Surgeon to the Leeds General Infirmary, &c.—[The radical cure of hernia is effected either by causing the closure or destruction of the sac, or by indirectly promoting the closure of the hernial aperture; but Mr. Teale observes, that unless both these effects are produced, little advance towards permanent cure is made. The substitution of a layer of peritoneum across the hernial aperture, affords a resistance so slight, as scarcely to possess any power in preventing a future hernial descent. The use of well-adapted trusses promotes the radical cure of hernia, by effecting contraction, or diminution of the aperture in the aponeurotic or muscular structure. The cicatrix left after the operation of Desault, may, for a time, mechanically prevent protrusion, or allow the aperture to contract; and the operation of M. Gerdy, in which the opening was filled with an *organized plug*, appears to have succeeded in the same manner.

The means employed for effecting the radical cure of hernia, by promoting closure or contraction of the hernial sac, are, excision of the testicle; incision of the sac; excision, suture, and cauterization of the sac; ligature of the sac after incision of the integuments; acupuncturation; and insertion of gold-beater's skin in the sac. These operations have succeeded in destroying or closing the hernial sac, but they do not prevent a fresh hernial descent.

The best means for promoting contraction or closure of the

hernial *aperture*, are, trusses; ligature of the sac and its envelopes; and the cutaneous plug. With respect to trusses, Mr. Teale observes:]

Our object, then, in attempting the radical cure of hernia by trusses, should be to secure perfect retention of the viscera, without exercising injurious pressure. If too high a degree of pressure be employed, inflammation or irritation may be produced, and may require the suspension of the treatment. From undue pressure operating for a long time, but less powerfully, the walls of the abdomen sometimes become atrophied, and their strength diminished. When the pressure is too much concentrated, by the use of pads of small size and great convexity, in large inguinal herniæ, which have considerably dilated the inguinal canal, the aponeurotic structures of the canal are thereby stretched, and, in time, may become actually elongated, and consequently weakened, by the pressure.

In attempting, then, to produce a radical cure by the use of trusses, it is necessary to guard against such degrees and modes of pressure as would excite irritation in the parts compressed, or produce either atrophy or elongation of aponeurosis and muscle. The means best calculated for promoting perfect and salutary retention of the viscera, are such as are generally most efficient in the palliative treatment of hernia.

[The operation by ligature is not justifiable, seeing that it causes so much pain and loss of life.

Two ways of introducing the cutaneous plug have been adopted, meriting further trial. Dr. Jameson, of Baltimore, detaches a piece of integument from the neighbourhood of the ring, and introduces it into the aperture. The plan of M. Gerdy, which has also been followed by others, has for its object to draw the loose scrotal integument into the inguinal canal, and to cause adhesive inflammation between the invaginated integument and the wall of the canal. Mr. Teale adds:]

M. Gerdy has attempted to close the hernial aperture by carrying a fold of the scrotal integuments upwards into the inguinal canal, and retaining them invaginated in that situation by one or more sutures. The principle of the operation was probably suggested by the result of two cases recorded by Arnaud, wherein, during the reduction of an inguinal hernia, a fold of skin was carried up and drawn into the ring; adhesion took place, and the cure was permanent. The instrument employed by M. Gerdy in this operation is a curved needle fixed in a handle, and concealed in a sheath, along which it may be moved. The needle is pierced near its point by two apertures, and along its convexity between the two openings is situated a groove deep enough to lodge a double ligature of waxed silk. The operation is performed in the following manner:—The patient being placed in the horizontal position, the surgeon, having ascertained that the hernia is perfectly reduced,

pushes with the forefinger of the left hand a blind pouch of integuments upwards into the inguinal canal, anterior both to the cord and the hermial sac. The point of the needle, armed with the ligature, is then guided along the finger to the bottom of the pouch, and by depressing the handle is brought out through the anterior wall of the inguinal canal. One end of the ligature is then laid hold of by an assistant, and, the point of the needle being withdrawn into the pouch, a second similar perforation is effected at a few lines' distance from the previous puncture. In this manner both ends of the ligature are carried from the inside of the pouch or invagination through the inverted skin, the tendon of the external oblique, and the integuments of the inguinal region, where they are tied over a piece of bougie. One or more of these stitches are made, according to the size of the opening. Caustic ammonia is then freely applied to the internal surface of the pouch, and the operation is concluded by covering the parts with a slight compress, spread with common cerate. About the third day a copious suppuration is established, and at this period the sutures are removed; but this removal of the sutures should depend only on circumstances which appear to warrant it. After the operation, adhesion gradually takes place between the invaginated integument and the sides of the inguinal canal; whilst at the same time the pouch itself becomes obliterated by the process of granulation set up by the caustic. Within the fifteenth or twentieth day the suppuration ceases, and the dilated inguinal canal is found completely blocked up by a strong thick plug, the presence of which is indicated by an external projection, which may be distinctly felt beneath the skin and tendon. This gradually disappears, until no trace of the operation remains, except a trifling scar at the entrance of the pouch, and a slight elevation and shortening of the scrotum on that side. The recumbent posture should be maintained for about a month after the performance of the operation, and a truss worn for three or four months after the patient leaves the bed.

Mr. Bransby Cooper, in performing M. Gerdy's operation, pushed a portion of scrotal integument before the forefinger of his left hand, through the external ring, into the inguinal canal, as high as he could pass it, and, upon the finger, introduced a director. A long needle fixed in a wooden handle, and having the eye near its point armed with a double silk ligature, was then carried along the director to the very extremity of the invaginated skin, and was pushed through the tendon of the external oblique muscle and the skin, and made to come out an inch and a half above Poupart's ligament: one end of the silk was then retained by an assistant, and a needle drawn back again into the inguinal canal along with the other end; when it was again pushed through the abdominal parietes, in a similar manner as before, about four lines distant from the other end of the thread, including necessarily so much of the skin between the two silks, which were now tied over a piece of bougie.

M. Signorini has modified M. Gerdy's operation by using three hare-lip pins, and the twisted suture, moderately tight to fix the invagination. The pins and threads were removed on the seventh day.

[This operation is often attended with serious accidents, and even loss of life. Of sixty-four cases, four died, and several had suppuration of the abdominal walls. It can only be considered justifiable, when palliative treatment has failed, or the hernia is so great as to interfere seriously with the patient's avocations, comfort, or health.*]

Teale on Hernia, p. 74.

146.—*Treatment of Strangulated Hernia.—Examination and Treatment of the Protruded Intestine.*—By. T. P. Teale, Esq., F.L.S., &c.—Mr. Teale, after having described the various modes of operating in strangulated hernia, and the different instruments devised for that purpose,† goes on to speak of the treatment of the protruded intestine, when hyperhematic; he says, "There are no degrees of discoloration of the intestine, short of its vitality being extinct, which forbid the replacement of the part within the abdomen." In inflammation, the intestine exhibits various shades of red colour, more or less florid, and the vessels are seen to have an arborescent arrangement. When congested, the small vessels may easily be seen of a dark colour, or they may be concealed by infiltration of blood beneath the peritoneum. The surgeon has to determine whether the intestine be still living or not. Mr. Teale observes:]

This question he endeavours to determine in the following manner. He waits for a few moments after the parts are liberated from stricture, and observes whether the discoloration becomes less intense; or he presses the blood out of the distended veins, and sees whether they become rapidly refilled. If no evidence of the circulation existing is thus obtained, the intestine may be covered with the integuments, or with a warm moist sponge; and after the lapse of a little time, when it is again examined, perhaps a slight diminution of the intensity of the discoloration may be detected. Should these means fail, the surface of the intestine

* A Practical Treatise on Abdominal Hernia, by Thomas Pridgin Teale, F L S., Fellow of the Royal College of Surgeons, and Surgeon to the Leeds General Infirmary, &c. [A most complete and able work, which ought to be in the library of every surgeon in the kingdom.]

† [Mr. Teale gives some excellent wood cuts, to illustrate the different kinds of instruments used in hernia, and amongst the rest a "concealed bistoury, used by Mr. Turner," which is no doubt an admirable knife for many cases. It is due to Mr Trant, of Dublin, however, to state, that a bistoury of very similar, if not superior kind, has long been used by him, and is made by Read and Co , 4, Parliament-street A description of this instrument will be found in the *Dublin Medical Press* for May 13, 1846, p. 303]

may be slightly scarified by the point of a lancet, when a slight oozing of blood will perhaps be observed. It is scarcely necessary to allude to the extreme care and delicacy which are requisite in making this experiment. If, from any of these expedients, evidence can be obtained that the vessels of the intestine, throughout the whole extent of the protruded portion, are still capable of transmitting blood, however deep the degree of discoloration may be, such portion of intestine may be returned within the abdomen. Sir B. Brodie, having failed to obtain proof of vitality from the usual modes of observation, scarified the surface of the intestine, and, having observed blood flow from the divided vessels, replaced it. The result of the case was fortunate. Before returning the intestine, it must be subjected to gentle pressure, in order that it may be emptied of its contents; and, when the bulk of the protrusion has thus been diminished, the intestine may be carefully pushed in successive portions into the abdomen, until the whole of it is replaced. The surgeon should afterwards pass his finger fairly within the abdomen, to determine that no portion of intestine is engaged within the sac, as well as to determine that, in returning the protruded knuckle of intestine, it had not been invaginated within a neighbouring portion of the intestinal canal.

2. *Treatment of the Intestine when gangrenous.*—When the intestine exhibits the deeper shades of discoloration, and no evidence can be obtained that its blood-vessels are still capable of transmitting blood, although the unequivocal marks of gangrene be not established, it must be treated as if it were undoubtedly gangrenous. When gangrene is fully established, the dead portions of intestine present considerable diversity in their colour. If the gangrene have resulted from simple congestion or from mechanical obstruction of the vessels, the part exhibits an uniform purple or black colour; its lustre is diminished, its serous membrane may easily be detached, and its coats are soft and lacerable. When the gangrene has resulted more immediately from inflammation than from a mechanical arrest of the circulation, it is usually limited to distinct spots or patches, which are of an ash-grey or greenish tint, devoid of lustre, soft, and lacerable. The gangrenous parts may be found more or less completely detached by ulceration, and the bowel perforated.

When the *gangrene is general*, or even extensive, an incision must be made through the whole length of the gangrenous portion of intestine, which must be left in the sac to be detached by the sloughing process. The opening thus made generally allows of the free evacuation of the contents of the upper portion of the alimentary canal, without division of the stricture. If, however, the stricture should still afford a material obstacle to the discharge of the intestinal contents, a director must be passed beneath it, and its division effected with as little disturbance as possible of the neighbouring adhesions.

The wound must afterwards be left open, to facilitate the free discharge of matters, and simply dressed with wet linen frequently renewed.

Louis maintained that the division of the stricture was not necessary for the evacuation of the intestinal canal, after a free incision had been made into the gangrenous portion of intestine; and Mr. Travers has strongly objected to the division of the stricture under these circumstances, on the ground of its disturbing the adhesions, and being unnecessary for the evacuation of the bowel; nevertheless, he admits that this rule of treatment may have exceptions. "If," says Mr. Travers, "the stricture should still be sufficient to retain the matters, which will seldom be the case, a moderate dilatation of it will be required." Mr. Lawrence, coinciding with Mr. Travers in opinion that the division of the stricture is generally unnecessary, states, that if the stricture be so narrow as to interfere with the discharge, an incision must be made to afford the requisite room. To ascertain this point, as well as to discover whether there be any interior constriction, Mr. Lawrence recommends that the end of the little finger, or a female catheter, be cautiously introduced into the bowel. Arnaud and Dupuytren divided the stricture when the fæces did not freely escape. The general practice of Sir A. Cooper was to divide the stricture. Mr. Key is of opinion that the danger of disturbing the adhesions has been exaggerated, and states that a director may be passed between the intestine and the stricture without materially disturbing the adhesions.

[Brasdor's practice of excising the gangrenous parts, and attempting to unite the divided extremities of the intestine by suture, is now universally abandoned. It was formerly the practice to retain the gangrenous intestine by a ligature through the mesentery, to prevent the divided portion of intestine being retracted within the abdomen, and the consequent effusion of fæces into the peritoneum. Desault, Scarpa, and Travers have strongly expressed their opinions in opposition to this practice. "Not only," says Mr. Teale, "is the ligature unnecessary, but it is shown by Scarpa to be also injurious, by counteracting, to a certain extent, the subsequent process of spontaneous cure. In speaking of the treatment of the intestine when adherent, Mr. Teale observes:]

Recent adhesions of the intestine to the sac or omentum may be destroyed by the finger, or handle of the scalpel, provided the intestine be not in a gangrenous state; in which case it must be treated in the manner already described. If the two sides of a coil of intestine are united to each other by a layer of plastic matter, this adhesion ought in the same way to be destroyed; as, from the neglect of this precaution, the intestine has been held in such an angular form after its return into the abdomen, as to occasion obstruction to the passage of the fæces, speedily followed by death. Recent adhesions of the intestine to the mouth of the sac are generally destroyed by the act of drawing down the intestine after the stricture has been divided, or during the replacement of the protruded viscus. After the intestine is returned, the finger should be passed through the ring into the abdomen, to ascertain

that no part of the late protrusion is injuriously confined by plastic matter.

Old organized adhesions uniting the intestine to the body of the sac, when of moderate extent, must be cautiously divided by the knife unless they unite the parts closely to each other; in which case portions of the sac must be dissected out, and returned with the intestine.

When the adhesions are of great extent, and cannot be overcome without tedious or dangerous dissection, their division is improper. The stricture should be divided, and the intestine allowed to remain in the sac.

Teale on Hernia, p. 128.

147.—*On the Operation for Strangulated Hernia, without opening the Sac.*—By J. F. South, Esq.—[In Mr. South's translation of Chelius's "System of Surgery," we find some good remarks on this operation. The operation of opening the sac was performed so long ago as 1718, by Petit. Monro and Cooper also practised it in large herniæ, but it is Mr. Key who has raised it in the estimation of practitioners of our own day; he recommends it principally on account of the mischief arising from the exposure of the inflamed bowel to the air and light, and to handling. South believes, with Lawrence, that peritonitis often results from pressure upon the neck of the sac, by the stricture being kept up for hours and even days; yet an additional cause, he says, "is to be found in the unwarrantable violent and repeated squeezing which the rupture suffers during the use of the *taxis*." The great objection to this operation is the possible gangrenous condition of the intestine or omentum, and the question arises, can this condition be detected? Mr. Key believes it may; South is of a different opinion, he says:]

I cannot agree with Key, "that the ordinary characters of a completely sphacelated portion of bowel are distinct enough," for I am quite sure I have seen them all existing more than once or twice without any gangrene, but simply depending upon the unwarrantable violence used in attempting to return the rupture. But I do agree with him, that "it sometimes happens that no such change takes place in the swelling, and then the evidence of gangrene is much more equivocal." It is by no means infrequent to find an intestine mortified, although the time it has been strangulated is short, and not the slightest external sign leads to the presumption of its condition; as, on the contrary, it now and then happens that the exterior of the swelling is tender, inflamed, doughy, and crackling, from the causes I have just mentioned, and yet the intestine within be healthy, and the patient recover the operation. As regards the loss of elasticity in the swelling, I believe it a very uncertain sign; the intestine may be gangrenous, but the sac full of fluid, as is commonly the case under such circumstances, and then the elasticity remains. The only sign which I think can be relied upon, though even that is doubtful, is when the intestine has burst; then,

indeed, although the redness, doughiness, and crackling still remain, the rounding of the swelling subsides, and when a little pressure is made on it a central hollow is produced, and a sense of yielding beneath, very different from the pitting caused by pressure on œdematous cellular tissue.

From my own personal experience of the division of the stricture external to the sac, I can say nothing, never having performed it. But I do not think so great advantage is gained by not opening the sac as is stated. From all the cases I have observed, either in the practice of others or in my own, I do not think cutting through the hernial sac, and consequently opening the peritoneal cavity, so serious as generally considered. If inflammation of the peritoneum have not been previously set up, either by the rough usage of the rupture, or by the irritation which a long strangulated or gangrenous gut produces, I cannot understand why making a small opening into the peritoneal cavity should be more dreaded than the long slits, which are now made without compunction, for the removal of diseased ovaria, and so forth. There are, however, some conditions which even those who advise leaving the sac untouched, admit, require that it should be opened, namely, confinement of the protruded parts by entangling bands, or by adhesion to the sac itself, and a gangrenous state of the bowel. Under all circumstances, therefore, I am still disposed to continue the practice of opening the sac, as I have hitherto done, believing it to be the most safe. I cannot conclude these observations without stating that, I believe much of the fatality of operations for strangulated ruptures depends upon the *improper after-treatment*. I well recollect the time when, as soon as the patient was put to bed, he was dosed with senna and salts, with the view of speedily procuring stools, and, his already irritable bowels being thereby rendered still more iiritable, he speedily sank. Although this practice is probably less followed now than formerly, yet I am afraid there is still too great inclination to employ purgatives too early. For a few hours nothing more than a clyster should be given, and not even that, unless the patient be very uneasy in his bowels, and puffed up with wind. Not unfrequently they relieve themselves, and only after twelve or eighteen hours is it advisable to give medicine by the mouth, for the purpose of completely clearing the whole intestinal canal. And unless there be any special indication for calomel, I believe that castor oil is the best remedy of all.

Medico-Chirurgical Review, April. 1846, *p.* 508.

148.—*A Case of Strangulated Hernia.*—By B. Phillips, Esq., F.R.S., Assistant-Surgeon to the Westminster Hospital.—[This case was remarkable inasmuch as it occurred 12 months after operation. The patient was 73 years of age, and had been operated on by Sir B. Brodie, when her recovery was slow but complete. Finding that the medicines she was accustomed to take did not have their proper effect, she removed her truss, and found a tumour,

the contents of which she could press back with a gurgling noise. Urgent symptoms came on, and Sir Benjamin Brodie was called in consultation; he thought there was no strangulation at the seat of the former stricture, but that obstruction existed elsewhere. She soon sank and died.]

On the following afternoon the body was examined; the abdominal cavity was laid open by a central longitudinal incision; from this another was carried in an oblique direction so as to lay open the intestine contained in the sac. We found that although the opening through which the intestine passed was large, it was still small enough to cause a strangulation of the gut, which was of a dark chocolate colour. From that point the intestine was followed until we arrived at the left lumbar region without the discovery of any obstruction. I then observed that the tube had passed far beyond that point, and that it was not probable that there was any obstruction further down: however, the search was continued, and we discovered that the uterus and the rectum were consolidated into a dense fibrous mass, a small cavity existing in each; that of the rectum being barely sufficient to admit a small bougie.

Several curious circumstances are presented in this very interesting case. The almost simultaneous occurrence of a strangulated hernia, and of intestinal obstruction from another cause. The ready passage of an elastic gum stomach tube through an obstruction which did not admit of the passage of any fæcal matter, even when acted upon by enemata.

The probability was very strong that the intestine would not be strangulated a second time at a point which had been so much enlarged by previous operation; the probability became almost a certainty when the tumour was so readily returned; and yet, although little more than twenty-four hours elapsed, between the gurgling reduction of the gut, and the death of the patient—the powers of life being naturally feeble, yet the intestine had acquired a dark chocolate colour, and had become strangulated at the old crural ring. Then with respect to the other obstruction the obscurity is not less:—it existed at a time when the gut very readily passed back through a large opening: it was fair to assume that the obstruction was not there unless indeed the gut had been nipped or unduly pressed upon by the truss, and had thus undergone contraction,—but then the distended transverse colon rendered that view of the case improbable, and made the assumption probable that the obstruction was nearer the rectum than the part contained in the hernial sac: but opposed to that assumption was the fact that twelve inches of stomach pump tube was passed along the intestine with comparative ease; and supposing the rectum disease to be one on which the original obstruction depended, how came it that if it admitted a tube of the size of the little finger, it would not allow fluid fæcal matter to pass? for it is the fact that there was no impaction of solid fæcal matter at any portion of the intestinal tube.

Two suggestions here occur: the hernial tumour was very inefficiently maintained by the truss; it was so constantly down that it might have constituted an obstacle, or it might be that the very flexible tube first introduced did not pass through the rectal obstruction at all, but became coiled up in the very extensible rectum of an old woman with very relaxed fibre; for, as I have already stated, the more unyielding new tube could not be passed beyond four inches. Whatever explanation may be adopted, I think it must be admitted, that whether the rectal disease constituted the original obstruction or not, it is certain that at a later period another was constituted by the strangulated intestine.

The case altogether deserves to be recorded among the curious cases which the practice of the surgeon not unfrequently affords.

Medical Gazette, April 10, 1846, *p.* 635.

149.—*Enterotomy of the Small Intestine.*—M. Maisonneuve has adopted a mode of practice which, I am convinced, is calculated to save the lives of many subjects of strangulated hernia, who would otherwise perish. It frequently happens after the operation for hernia, that the strangulated portion of intestine, when released from stricture and replaced within the abdomen, is incapable of resuming its functions, symptoms of obstruction continue, and the intestine above the part strangulated remains in a state of tympanitic distension. M. Maisonneuve, having operated upon a patient for strangulation of the small intestine, found, five or six hours after the operation, that the obstruction was unrelieved. He separated the agglutinated edges of the incision, and, passing his finger into the abdomen, felt a distended coil of small intestine, adherent by false membrane to the surrounding parts. Without materially disturbing the adhesions, he seized the distended coil of intestine with the forceps, and by means of probe-pointed scissors, established an opening in it, through which the intestinal contents were freely discharged. The urgent symptoms were relieved, and the patient recovered.

Provincial Medical Transactions, Vol. 2, *N. S.*, *p* 117.

150.—*Case of Obstruction of the large Intestine, in which the ascending Colon was opened with success.*—By Samuel Evans, Esq., Derby.—[The patient was a robust farmer, twenty-three years of age: the date of his illness was in September, 1843, when he ate a quantity of sloes, by which a severe attack of colic was produced. The disease yielded to active treatment, but returned the following January, and this attack was succeeded by fœtid watery stools mixed with scybala. Mr. Evans saw him on the 5th of February, when the abdomen was greatly distended, and he was suffering from severe pain, which recurred at intervals of five or ten minutes. It was most severe in the right iliac fossa, and here the distension was most marked; the pulse seventy-six, and soft. He was ordered a sedative dose of Battley's solution, to be followed by a pill, con-

taining a drop of castor oil every three hours, and a colocynth enema every four hours. The opiate gave him temporary relief, but in a few hours the pain became worse, and vomiting of mucous and bilious matter took place. The croton oil appearing to increase the pain and sickness, was discontinued, and opium with calomel was given freely, and soap and water injections were used every three hours. The opiate soon relieved the pain, but there was no evacuation from the bowels; he continued in this state till the 12th, when stercoraceous vomiting commenced, and the pain returned in a most severe form. A large dose of liq. opii sed. was given, which alleviated the pain, and a rectum bougie was introduced, but without bringing away any fœcal matter. Next day, however, after the administration of an enema of soap and water, a large quantity of flatus escaped, and a little fæcal matter, which considerably diminished the abdominal distension.]

From this time to the beginning of April, the size of the belly gradually increased: he also daily suffered many paroxysms of pain; and although at intervals of one, two, or three days, large quantities of flatus, and a few very small portions of clay-coloured fæces escaped, it was quite obvious that there still existed a partial obstruction in the bowels, since the distention of the abdomen, and the *swelling in the right iliac region*, had considerably increased.

During this protracted illness he was seen by Dr. Bent, of Derby, and several of my medical friends, by whom various remedies were proposed, but he obtained relief *only*, from the administration of narcotics. The patient had become much emaciated, was extremely weak, and his general health greatly impaired; the vomiting recurred almost daily, and the stomach could retain only the smallest quantities of food; the lower extremities were much swollen, the tongue and skin dry, the pulse frequent and small.

[On the 25th of March, Mr. Evans proposed to make an artificial anus, by Callisen's method, as modified by Amussat. By the desire of his friends, however, it was postponed.]

April 8th.—He has become very much emaciated; the abdomen is distended to the greatest possible degree; the convolutions of the small intestines, which appear to be greatly enlarged, can be clearly traced through the attenuated coverings, and their vermicular motions distinctly observed. The swelling in the right iliac region has so much increased as to present the appearance of great deformity. The integuments in this region are extremely thin, and of a vivid colour: there is considerable œdema of both legs; tongue dry and fissured; the mucous membrane of the tongue and of the mouth is covered with an aphthous eruption, he has not retained the smallest quantity of food, and has frequently, since the 4th inst., vomited dark, watery, bilious matter: there has not been the slightest appearance of fæcal evacuation for four days: pulse feeble and fluttering, varying from 112 to 124: respiration 16: urine scanty and turbid, of a dark olive colour, and fœtid.

[The patient's friends were now most anxious the operation should be performed, which was immediately executed by Mr. Evans, as follows:]

The patient having been laid on the bed with his face downwards, two pillows were placed under the belly for the purpose of rendering the right loin more prominent. I made an incision of four inches across the loin, commencing it at the outer margin of the sacro-lumbalis muscle, about an inch above the crest of the ilium, and extending it forwards in a direction parallel to the crest. Having divided the latissimus dorsi, and the outer margin of the quadratus lumborum muscles, I proceeded to expose the bowel by opening the fascia; but in doing so, I also opened the intestine, which was intimately united with the fascia, by dense cellular tissue, without any intervening fat: indeed, no fat whatever was brought into view, as I had been led to expect there would be—a fact that may be accounted for by supposing the extreme distention of the head and ascending portion of the colon, to have pressed upwards the kidney with its circumjacent fat, above the line of incision. Possibly, however, this fat may have been absorbed, as the man was extremely emaciated. The instant the bowel was punctured, a profuse quantity of semi-fluid, clay-coloured fæces was projected with great force through the opening, and continued to escape for a considerable time, so as to amount altogether to more than two gallons. I then enlarged the orifice in the intestine to the extent of one inch in a transverse direction, or parallel to the external incision. The last steps of the operation consisted in connecting the edges of the incision in the intestines, with those of the outer or anterior half of the external wound, by means of five sutures, the inner third of the external wound being closed by a pin, and twisted suture, and covered by a few strips of adhesive plaster. A small piece of oiled lint was then placed between the edges of the wound in the intestine, and cloths wetted with warm water were laid over the wound. The abdomen, now reduced to its natural size, was supported by a many-tailed bandage, and the patient was placed on his right side in bed, so as to allow of a free escape of the contents of the bowel through the wound.

Nine p.m.—He has had no return of vomiting, the sense of distention had ceased, and he feels in every respect greatly relieved: he complains of a smarting pain in the wound, which extends to the right iliac region; pulse soft, regular, 110. Ordered forty drops of liq. opii sedativus.

[On the 12th of April, he is reported as labouring under a sinking sensation at the epigastrium; he was ordered mutton chops, wine, and milk daily, with tonic medicines. On the 18th, improvement is gradual but progressive: the bowels act regularly through the artificial anus, and the wound is granulating. Water was injected into the rectum through a long tube, and numerous particles of fæcal matter came along with it.

May 6th.—The evacuations escape entirely by the artificial anus, from which the plug is removed four or five times a-day, for that purpose. Injections of warm water per anus return, mixed up with mucus only.

June 28th.—Seven quarts of pale straw-coloured urine, having all the sensible properties of saccharine urine, and of sp. gr. 1040, have been passed during the twenty-four hours: thirst abated, pulse 100. The patient declares that the thirst, diuresis, &c., had not existed more than a week, and this assertion is fully confirmed by his mother, whose anxious watchfulness render her quite alive to the slightest variation in the symptoms. According to her statement, the urine had seldom exceeded three or four pints daily, and was of the colour of pale amber.

℞ Acidi nitrici diluti ʒiss.; tinct. opii ʒiss.; decocti cinchonæ ℥viii. m ft. Mistura sumat ℥i. ter quotidie. Rep. pil. opii et kino mane nocteque. Diet—bread, beef, and mutton; and to drink beef-tea and toast-water.

To avoid sweet, acid, and spirituous drinks; also vegetables and fruits.

[On the 4th of July, it was evident he was sinking fast, and he died the following morning at eight o'clock. The body was examined twenty-three hours after death.]

The artificial anus was a small constricted circular aperture, about five-eighths of an inch in diameter; its margin was firm and unyielding; the integuments near the orifice were slightly drawn inwards, and their connection with the coats of the intestine were so intimate, that the line of union of the tissues could not be defined.

The abdomen contained six ounces of serum, of a dirty yellow colour.

The stomach and small intestines were greatly distended with flatus; the peritoneal surface of the lower two-thirds of the ilium was highly vascular, and of a florid red colour.

The mucous membrane of the stomach and small intestines appeared healthy; the latter contained a small quantity of pale yellow chymous matter.

The cœcum was enormously distended, and was nearly as large as a stomach of ordinary size; the ascending colon was also much enlarged.

About a quarter of an inch from the commencement of the transverse colon, that is, just beyond the angle formed by the junction of the ascending and transverse portions of the colon, the gut was contracted to about three-quarters of an inch in diameter, and about the same in length; the contracted portion presented a cartilaginous hardness.

The serous covering of the cœcum, ascending colon, and the first half of the transverse colon, was highly vascular; there were

numerous small patches on its surface, of a deep red colour, which were partially covered with recently-effused lymph.

The anterior three-fifths of the circumference of the first half of the ascending colon were bounded by peritoneum, and the posterior two-fifths by the fascia covering the lumbar muscles; and it was in the latter part of the bowel, about half an inch beyond the cœcum, that the artificial anus was formed.

About two ounces of dark brown fæcal matter were found in the cœcum and ascending colon; the mucous membrane was of a deep claret colour, and thickly covered with bloody mucus.

The contracted portion of the colon was almost as hard as cartilage; it formed a ring about three lines thick, and nine lines broad, and appeared to consist of compact white fibres, arranged irregularly around the intestine; between the mucous and muscular coats the stricture would just admit a crow-quill; its inner surface was in a state of ulceration, and presented an irregular granulated appearance without any traces of mucous membrane. The mucous membrane of the first third of the transverse colon was in a state of uniform injection; the whole extent of the transverse colon was lined with a mucopurulent secretion, of a greenish colour, which was most abundant near the stricture.

The descending and sigmoid portions of the colon were quite empty and contracted, and presented no morbid appearance.

Both kidneys were larger than natural, their structure was not altered, but the cortical substance was rather pale than natural.

Liver, spleen, and pancreas, healthy.

Thorax.—The pericardium was adherent to the heart in its whole extent.

The heart was considerably enlarged.

[Mr. Evans remarks that this is the eleventh case on record in which this operation has been performed in consequence of intestinal obstruction. In this case it was the only method that could afford relief, but it was deferred until the patient was very much exhausted by the sufferings he had to endure, and the case was very unfavourable for the operation. The large quantity of fæcal matter which escaped through the artificial anus, shows to what a degree of distension the cœcum is capable. We ought to bear in mind, that although circumstances were unfavourable for the performance of this operation, that the patient steadily recovered, and that it was another disease from which he died. The operation itself was in every respect successful.]

Medico-Chirurgical Transactions, Vol. 28, p. 95.

151.—*Removal of Seventeen Inches of the Intestine.*—By A. Brigham, M.D., Utica, New York.—Dr. Brigham reported a case (See Retrospect XII, p. 263,) in the *American Journal of Medical Science*, in which 17 inches of the intestine were removed, from which the patient recovered, but in a year afterwards she

sunk, and died of mental disease, no symptom having a relation to the removal of the intestine being manifest. On examination of the bowels after death, Dr. Brigham remarks that:]

The portion of the intestine removed at the time of the injury was found to be the colon: it having been divided about four inches from the entrance of the small intestine. The divided portions were drawn together at the place of injury and united by organized lymph, which also connected the intestines to the parietes of the abdomen where the wound was made. The passage between the divided ends of the intestine was small and crossed by a few ligamentous-like bands—but still large enough to permit the passage of semi-liquid fæces.

Judging from the size of the intestine removed, which was diminished by being drawn out at a small opening, we had erroneously supposed, without particular examination, that it was a portion of the small intestine, and so stated in our former communication.

American Journal of Medical Science, Jan. 1846, *p.* 44.

152.—*Treatment of Internal Bleeding Hæmorrhoids.*—By Dr. Watson.—(*New York Journal of Medicine*, July 1844.)—In an interesting paper on hæmorrhoids and *prolapsus ani*, Dr. Watson states, that for the bleeding internal piles, he has found injections of acetate of lead the most valuable remedy. He recommends to employ this remedy of the strength of one drachm of acetate to eight ounces of rain or distilled water, and to repeat the injection after every alvine dejection, as it is then chiefly that the hæmorrhage occurs. Two ounces of the solution he regards as sufficient for one injection. An occasional blue pill he finds useful, followed by a dose of castor oil, with extract of taraxacum. For obviating the obstinately costive habit which usually attends hæmorrhoids, Dr. Watson recommends as the best, two to three drachms of the following confection at bed-time: common rosin, well pulverized, one ounce, clarified honey, five ounces. Half an ounce of balsam of copaiva renders this confection still more efficacious, but it is then apt to disagree with delicate stomachs. This medicine produces early next morning a soft consistent motion without griping, tenesmus, or any other disagreeable sensation.

Edinburgh Medical and Surgical Journal, Jan., 1846, *p.* 238.

153.—*On Internal Piles, with Prolapsus and Hæmorrhage, cured by tying the bleeding Pile, and removing the Hæmorrhoidal Excrescence.*—By Mr. Hamilton.—In many cases of internal piles, when the patient goes to stool, a number of small tumours protrude through the anus. They are usually of a deep purple or violet colour, resembling purple grapes or damsons, but sometimes much larger, equalling a chesnut or small egg in size. At first, when small, they either go up of themselves or are easily reduced: but they soon become larger; for when they get through the anus,

the contraction of the sphincter strangulates them and causes them to be much distended with blood; by degrees also, they drag down more of the mucous membrane of the rectum. As they increase in bulk they are harder to reduce; and as they continue long out, the contraction of the sphincter becomes exhausted, the muscle relaxes, and offers less resistance to the protrusion, so that a portion of the bowel with the internal piles comes down, not only during the efforts at stool, but when the patient walks or rides, particularly in hot weather. The complaint then becomes truly distressing. One or more of the piles become inflamed, the blood coagulates in them and is absorbed, and lymph poured out, which becoming highly organised and full of vessels, forms what has been called the vascular tumour. At length the projecting tumours in the rectum are irritated and abraded by the passage of hard fæces, and ulceration of their summits takes place, with free hæmorrhage from their highly vascular structure. This is particularly apt to occur during the efforts in passing a motion, when the open pile, strangulated by the pressure of the sphincter, and distended to the utmost, sometimes actually spits out blood, and in those cases you will see the sides of the night-chair dashed with blood of a florid colour, which also trickles down the patient's thighs and legs. Even after the piles and prolapsed bowel are returned, the hæmorrhage at times goes on within the gut. I recollect the case of a shoemaker who had very free bleeding during each motion, but the first part of the motion was a large clot of black blood, the result of the hæmorrhage into the rectum after the previous motion. Besides the irritation, the pain, the serous discharge which always takes place when the prolapsus is large, the loss of time in the reduction, these constant daily bleedings, often to the extent of six or eight ounces of blood, finally exert a most injurious effect on the constitution. The patient's complexion is of a pale, watery-looking, yellow colour; the sclerotic of a pearly white. He loses all energy; he suffers from the vascular reaction attending large losses of blood, viz., palpitation of the heart, violent headache, with noise in the ears; and, at last, from the deteriorated state of the blood, deprived of its more solid particles, anasarca supervenes.

[Mr. Hamilton considers internal piles of long standing to be of three kinds:]

1st. The most numerous are true varicose enlargements of the hemorrhoidal veins, the soft purple piles covered by smooth mucous membrane.

2nd. A varicose vein covered by mucous membrane, altered by inflammation, thickened and highly vascular, so as to bleed readily from the whole surface, which is red and rough.

3d. A firm red pile of rather a pale colour, composed of highly organised coagulated lymph, permeated by numerous vessels sometimes of large size, and which, when the mucous membrane is abraded, and they are opened, bleed very freely. This is the vascular tumour, and is often the seat of the chief hæmorrhage. I

believe this to be formed originally by one of the varices becoming inflamed, and the blood in it, as a necessary consequence of the inflammation, coagulating. As the coagulum is absorbed, the irritation of the pile being kept up, lymph is poured out in its place, and becomes organised and permeated with vessels, with which it is abundantly supplied from the highly vascular neighbouring structures. The very shape and situation proves the vascular tumour to have been originally the same as the varices which surround it.

Now, with regard to the treatment. When the case is recent, the prolapsed piles not large, the bleeding small, and the constitution not affected, you are not called on to operate, as you can generally do a great deal by other means. Regulate the bowels by mild purgatives, a few grains of blue pill and rhubarb at night, and a little of the infusion of roses and Epsom salts in the morning for a few days, after which, give the ordinary electuary of confection of senna, sulphur, cream of tartar, and mel rosæ, or, what is better, treacle, as the mel rosæ gripes some people. If, besides the pile coming down, there is bleeding, let the patient, after breakfast, throw up a pint of cold water with a drachm of nitre dissolved in it; this you will find very useful. Enjoin steady exercise, and moderation in diet. In thin delicate subjects, in whom the disease is sufficiently common, tonics, particularly the mistura ferri aromatica, are of service. Should there be any serious organic disease, particularly of the chest, you should interfere as little as possible with the piles.

[When the pain and irritation from the pile, as well as the hæmorrhage, are beginning to weaken the patient, effectual means must be adopted. Mr. Hamilton on this subject remarks:]

Of these, the chief are the actual cautery, which is now seldom resorted to, the nitric acid, cutting off the hæmorrhoidal tumours, or tying them. In a very bad constitution, where you would not like to try either the knife or ligature, you may occasionally resort to the application of the actual cautery to the bleeding pile. It is much less painful than you would think.

With respect to the nitric acid, I have no confidence in it in cases where the prolapsus is large, as I have seen it applied in such cases with scarcely a brief temporary effect. Where there is a single bleeding vascular tumour, it will be found a safe and often efficacious remedy. As to cutting off internal piles either with the knife or ligature, there appears to be a common consent among the best surgeons in this country against it. Sir Astley Cooper mentions four fatal cases—three from hæmorrhage. This is the danger: after the piles are cut off, and the bowel reduced, the patient begins to experience a sense of heat in the rectum ascending up the abdomen, with some pain, and a desire to go to stool. There is a sinking, anxious feel. If he goes to the night-chair, he will probably pass a quart of blood, more or less clotted. This will be repeated several times—fainting and death will soon follow.

Dupuytren, who was an advocate for excision, used to have an assistant stop with the patient after the operation, to watch the approach of the symptoms of internal bleeding. When these symptoms manifested themselves, the patient was desired to pass a motion. The blood came away, and the bowel was protruded, and the bleeding points were touched with the actual cautery. This stopped the bleeding, but was generally followed by much local irritation, retention of urine, sloughing, and sometimes contracted anus. You will, therefore, not try excision, except of the external piles or hæmorrhoidal excrescences.

The operation which I should recommend, and which you saw me perform in the two cases just discharged, is tying one or more of the piles. In Levassey, when the bleeding came from a single one, and when the prolapsus was not large, I only tied the bleeding pile and cut off the hæmorrhoidal excrescences. In Grogan, where there were many large piles protruded, and the bleeding more general, three were tied. Previous to the operation, as in those cases, you will give a purge the day before, because it is well to let the rectum rest for a couple of days after the operation. It would be wrong not to inform you that this operation, simple as it appears, has caused death. In one case tetanus followed; in another, gangrene of the rectum was the cause of the fatal result. Such consequences are, however, rare indeed; and out of a very large number of cases which I have experienced, I never saw any serious symptoms ensue. Pain sometimes follows the operation.

In true prolapsus, all the coats of the rectum come down; it is a protrusion of the upper part of the bowel through the lower, and out through the sphincter—a sort of invagination by the dependent position of the prolapsed bowel, which may be from one to several inches long. From the pressure of the sphincter it becomes very much swollen, and the reduction proportionally difficult. Inflammation finally commences, and if the part has been down beyond a certain time, ulceration begins round its base, or gangrene of a portion of it ensues. You are generally sent for before this, and you find a mass of intestine protruded from the anus, of an intense red or slightly livid red colour, very hot and throbbing, and the surrounding parts wet with serous discharge. The patient will be in much pain and distress. Letting him remain on his side after having oiled the fingers of your right hand, you press gradually and firmly on the prolapsus, so as to diminish its bulk, and to press it within the anus. But you must not be content with this; for in the majority of instances, directly you withdraw your fingers the prolapsus re-appears. The great thing is to push it beyond the internal sphincter, the contraction of which will most likely keep it up. To do this, you must push up the prolapsus within the anus as high as one, or in cases of old habitual prolapsus, two fingers will go, taking care that the whole is up; for one small fold on either side will be sufficient to drag it down

again. Where the prolapsus has been long down, even pushing it above the internal sphincter will not succeed. The hard tumour of the prolapsus acts as a foreign body, as it were, and stimulates the rectum to its expulsion. What you must do will be best shown by the following case:—

About a month ago I was asked to go and see an old man in the Liberties, whom I was told had been given up by his medical attendant, which I found, on waiting on that gentleman, to be true. I certainly found the old man very ill, in great torture, with a feeble intermittent fever, and dry brown tongue, a large, hard prolapsus, which had been down several days, and which was extensively ulcerated; he also had retention of urine. Attempts had been made to reduce the prolapsus, but they had failed; no sooner was it put up, than it protruded again immediately. I first drew off the water. I then touched the ulcerated portions of the prolapsed rectum with solid nitrate of silver. This gave pain, but I knew it would be likely to prevent after mischief. I then, after having oiled my fingers, reduced the prolapsus as I have described to you, beyond the internal sphincter; but directly I withdrew my fingers, the prolapsus was protruded—this happened a second time. I, therefore, got a moderate-sized tallow candle, cut it in half, rounded the end, and after having reduced the prolapsus, before it came down I introduced the candle, and desired the man to keep it in for a couple of hours. It effectually prevented the bowel coming down, and he recovered. A conical instrument, such as this small glass speculum recti, would answer for the same purpose.

Dupuytren, where a prolapsus had been long down, and was difficult of reduction, placed the patient on his face, with some pillows under the pelvis and belly, so as to make the anus the highest part of the body. After having surrounded the tumour with moist linen, and placed a compress on the centre of the external extremity, gentle pressure was used at the base, so as to diminish its volume, and with the finger it was gradually pushed inside, the last part protruded being the first reduced.

It is clear that, after having reduced a prolapsus, you have merely temporarily relieved the complaint. In young children, I suppose from the long-continued straining at stool, with a relaxed mucous membrane and a weak sphincter, the disease is common enough, and very obstinate. It generally gets well, and only demands any treatment necessary to remove the existing causes of constipated bowels or diarrhœa, ascarides in the rectum, &c. In adults, the disease is a very serious inconvenience. The bowel coming down more or less each time the patient goes to stool, and requires a long time to put it up again, the time so spent being often so considerable, that the patient very often accustoms himself to go to stool in the evening, that he may have plenty of time to reduce his prolapsus. You are, therefore, called upon to afford, if possible, *permanent* relief. This may be attained either by Hey's operation of cutting off a fold of skin at the margin of the anus so

as to include in the piece removed a small portion of the mucous membrane; or by Dupuytren's, which is merely a modification of Hey's, being the same in principle, viz., to remove with a sharp scissors some of the folds which radiate round the anus, taking care that the incision should extend a short way within the anus. The same operation I have already advised for internal piles with prolapsus, may also be used in the true prolapsus of all the coats of the bowel, namely, tying a few small folds of the membrane just within the anus. But in old men, in whom the true prolapsus most frequently occurs, and in broken-down constitutions where there is organic mischief elsewhere, all you can do is to palliate. Should the gut come down when the patient walks, you can use an anal truss, the ivory knob of which goes a short distance up the anus, and prevents the protrusion; or a pyriform pessary of boxwood may be passed up the anus, and kept up by a proper T bandage.

Dublin Hospital Gazette, Dec. 15, 1845, *p.* 131.

154.—*Fistula in Ano.*—[In Retrospect, Vol. XI., Art. 81, we gave some account of the several methods of applying the ligature in the treatment of fistula in ano. It seems that this method under some circumstances has been adopted for many years in Ireland, by Dr. Colvan, of Armagh. He says:]

The first case was that of a small farmer, who could not confine himself to bed for the necessary period if operated on by the knife. The fistula was complete, and situated about one inch, or rather more, from the verge of the anus. What I used was a catheter wire about as thick as a piece of small twine; this I twisted pretty tight at first, increasing the degree of tightness on the included part every three or four days, for which purpose he had to walk two or three miles from the country. He felt no great inconvenience from it until just before it had cut through the last remnant of the included part, he then got a little feverish, and the part somewhat painful and swollen, but by one or two days' confinement and rest, and the application of a little stupe and poultice, he got quite well, and has remained so since. The second case was that of a stone-cutter who could not confine himself, and who had also a considerable abhorrence of being cut. I operated on him the same way by passing the wire through the external portion of the fistula into the rectum until it was felt on a finger placed there, by which it was conducted out through the anus, and twisted to the proper degree of tightness. He felt the same inconvenience and feverish attack when the wire was just cutting through, but it was merely for a day or so, and he got quite well, and has remained so. Both these cases were operated on fifteen years ago, and I had an opportunity of questioning the subject of this second operation a few days ago in the presence of Dr. Robinson of the infirmary here, and he remains perfectly well. The third case is that of a respectable female who lived then, and does still, in the same street with me; she had a great abhorrence of

being cut, and if I had not operated in this way would not have submitted to an operation at all. I had opportunities of course of seeing her often, and of watching the case; it differed, however, in no respect from those I have detailed, and she has remained entirely well of it ever since. It is 13 or 14 years since it was done. I at first thought I had made a discovery of a new mode of operating in a very painful and troublesome complaint, and so it really was to me, as I never had heard of it, or seen any thing of the kind done, but in looking into old Heister, I there discovered that something of the sort had been performed long since, but for some reason must have fallen into very general disuse. There are many cases in which I am convinced it might be used with advantage, but it is quite clear that it never can be more than an auxiliary to the knife, which alone can trace out the different channels through which a complicated fistula may wind. It is, however, a useful remedy in certain cases, and one which, if properly done at first, and carefully watched afterwards, may, I feel certain, be perfectly relied on.

Dublin Medical Press, May 13, 1846, *p.* 289.

155.—*On Artificial Anus.*—By Leonard Trant, Esq., Dublin. —[In two former volumes we have given some interesting matter on this subject. One of the best Reviews of this branch of surgery will be found in the *British and Foreign Medical Review*, for October, 1844. A most admirable treatise on the same subject is in the *Cyclopædia of Practical Surgery*, by Mr. Teale, of Leeds, under the head of "Intestinal Fistula." In Retrospect, Vol. X., Art. 58, and Vol. XI., Art. 63, will be found much to interest the reader. In arranging our materials for these volumes, we completely overlooked a case of great practical value, which was published in May, 1845, by Mr. Trant, of Dublin.

The subject of this case was a female, aged 56, who was admitted into the Cork-Street Hospital, on the 28th of October, 1840, having laboured seven days under strangulated inguinal hernia of the right side. An operation was performed, and the protrusion was found to consist of "a loop of small intestine, about four inches in length, highly inflamed, and of a dark brown colour. At its most depending part, however, a depressed and flaccid patch (of a blackish hue) occupied fully two inches of its entire cylinder. On examination it was found to be in a state of complete sphacelation, although no well-defined line of separation had as yet distinctly established itself between the living and the deadened parts." The stricture was liberated carefully, so as not to destroy any adhesions the intestines might have formed in the vicinity of the ring, and the separation of the gangrenous parts was left to the efforts of nature, as it was considered that the discharge would thus be more gradual, and consequently less liable to shock the system, in her exhausted state, than the sudden gush that would necessarily follow the free division of the deadened parts.

From this condition she ultimately recovered, subject, however, to the distressing and debilitating effects of a preternatural anus at the groin.]

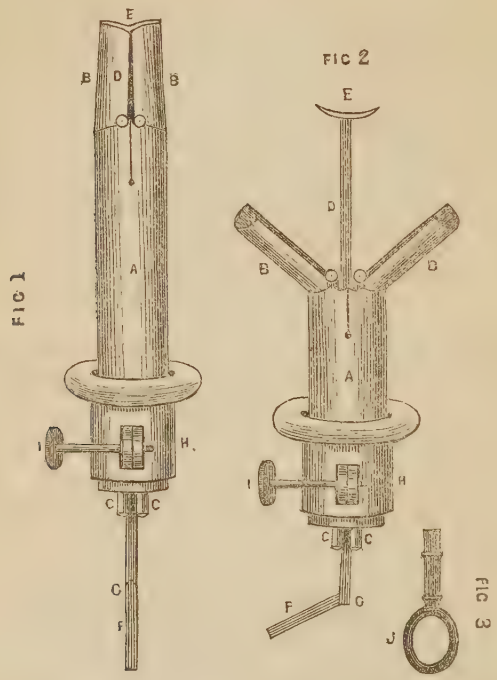


Fig. 1.—Represents the instrument, which is silver externally, and about three inches and a half in length, arranged for introduction, with the wings folded, so as to present a cylindrical appearance. The letters correspond to same parts as fig. 2.

Fig. 2.—Represents the instrument with its wings expanding, and the propeller pushed forward, as in the cavity of the intestine, during application.

A. The body. BB. The right and left wings. CC. The screws by which the respective wings are moved. D. The propeller. E. The concave extremity of propeller. F. The end of propeller, by which the concave extremity is pressed against the œperon. G. Screw for fixing the propeller. H. Shield which is moveable. I. Screw for fixing Shield.

Fig. 3.—J. The key by which the different screws are turned.

The emaciation and wasting of her person has increased considerably, and a gradual sinking of her vital powers is quite observable; the artificial opening has remained stationary (without exhibiting the slightest alteration in its size) for the last fortnight, so as to induce a feeling that the powers of nature, unassisted by art, were incapable of making further progress in restoring the parts to their normal state; or even should the natural process ultimately succeed (which was a matter of considerable doubt, from the prominent position occupied by the septum), it would require such a length of time to accomplish its object, that the unfortunate sufferer would in all probability fall a victim to inanition (before it could take place) from the defective and incomplete manner in which the digestive functions were carried on.

From the distressing and dangerous position in which the disease had now placed her, as well as from her own pressing solicitations, that something might be done to relieve her, if possible, from the sufferings she then endured, a careful examination was made of the parts connected with the artificial opening, when the extremity of the ventricular portion of the gut could be distinctly seen at the bottom of the wound, separated from the opening of the anal portion by the éperon, which covered it in a valvular manner. A soft gum-elastic catheter was passed beneath the éperon, so as to push it gently to one side, by which means the orifice of the anal portion was brought into view, which appeared retracted and much diminished in calibre. On the catheter being withdrawn, the septum was again pressed back on the anal opening by the discharge passing down from the upper portion of intestine, rendering it quite impossible that any of the intestinal fluid, passing from the upper extremity of the tube, could obtain admission into the anal opening so long as the septum retained its prominent position with respect to the divided extremities of the gut, and thereby, also, directing the stercoraceous matter flowing from the ventricular portion of the tube directly to the preternatural opening in the groin.

As the éperon from its projecting position appeared to form the chief obstacle to the restoration of the calibre of the tube, it was quite palpable that a cure could not by any possibility be effected unless this obstruction was removed, to accomplish which two different modes have been recommended—the one, to push it back towards the abdominal cavity—the other, to divide it either by section, ligature, or by more gradual section, as adopted by Baron Dupuytren. Not, however, feeling perfectly convinced as to the safety attending the latter mode of proceeding, I determined to adopt the former, it appearing to be a more safe and feasible means of establishing the continuity of the canal, as the pushing back of the éperon by pressure from without would be assisted by the retraction of the overstretched mesentery from within, so as to favour each other in overcoming the acuteness of the angle at which the divided intestine was united, and thereby placing the two

extremities of the tube in a more parallel direction, and, consequently, a more favourable position for restoring its calibre.

With the intention of assisting the efforts of nature in accomplishing this object, I constructed an instrument,* which is of a cylindrical form, about three inches and a half in length, and a quarter of an inch in diameter at each extremity. By its formation it admits of being passed through the artificial opening in the groin, so as to place it on the éperon at the bottom of the wound, where it can be retained for a considerable time without producing the slightest inconvenience. As it does not whilst in the intestine offer any obstruction to the passage of the fæcal matter flowing along the cavity of the tube, it also acts as a forceps in retaining the anterior wall of the intestine in close contact with the posterior surface of the abdominal parietes, whilst the propeller is pressing back the éperon towards the spine, consequently the danger of separating the delicate adhesions in this situation is prevented, which might otherwise cause a fatal extravasation into the cavity of the abdomen.

Having, as a preliminary step to the instrument being used, accurately ascertained the relative position of the orifice of the anal portion of intestine with respect to the other parts engaged in the formation of the artificial anus.

On the 7th of January, 1841, the patient was placed in an extended position, when the extremity of the instrument was introduced through the artificial opening, and gently pressed forwards until its further progress was resisted by the éperon, against which it was held in close contact, whilst the wings were expanded in the cavity of the intestine, so as to place them at right angles with the body of the instrument, and as the extremity of the propeller was kept closely applied to the septum, the wings, consequently, from the construction of the instrument, expanded, one in each portion of the tube, thereby bringing the anterior or free wall of the intestine on each side of the artificial opening into close contact with the posterior surface of the abdominal parietes. The shield on the outside was then pushed down on the integuments surrounding the opening of the artificial anus, so as to act in conjunction with the wings, (which were expanded in the cavity of the intestine), as a kind of forceps on the intervening parts, retaining them in close contact with each other, whilst the propeller was pressing back the septum towards the spine. The propeller having gently pressed back the septum to the extent of three-quarters of an inch, it was then retained in that position for a period of twenty minutes, when it was removed. During this proceeding she did not experience any inconvenience, either from the retention or introduction of the instrument. An enema was ordered to be thrown into the rectum, when some white hardened mucus passed off with the

* It was manufactured by Mr. Millikin, of the firm of Messrs. Read and Co., Parliament-street, whose intelligence and ingenuity as a surgeons' artist I have had frequent opportunities of witnessing.

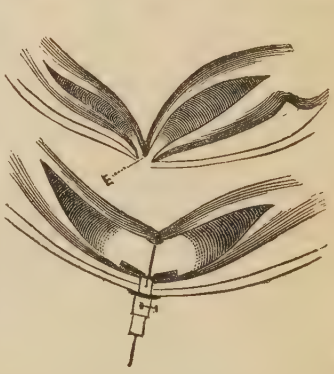
injection. As the fæcal matter still passed freely through the artificial opening, an enema was thrown into the rectum daily, and in each instance was returned without bringing away either flatus or feculent matter. On the 14th of January, as no feculent evacuation was observed to have taken place by the natural passage since the introduction of the instrument, it was again applied, as on the former occasion, and was retained in the intestine for a period of thirty minutes, during which time the propeller was gradually pressed back, so as to remove the éperon half an inch further from the artificial opening than on the previous application; it was then removed, and an enema ordered to be thrown into the rectum in the evening, which came away without producing any feculent discharge. On the following morning, however, she complained of being attacked during the previous night with a violent griping sensation in the hypogastric region, when a considerable quantity of flatus was disengaged from the rectum. Towards the evening of that day she experienced a painful colicky sensation, accompanied by an itching at the verge of the anus and a feeling of heat in the region of the rectum. During the night a considerable quantity of flatus and fluid stercoraceous matter passed through the natural opening; fæcal matter was still, however, discharging freely through the artificial anus, but was apparently diminished in quantity since the natural passage had been established.

For the five following days what passed from the rectum appeared to possess all the essential characters of well-formed feculent matter, whilst that which was passing from the artificial anus was a thin, bilious, and nearly inodorous fluid; that from the rectum, was also of a fluid nature, and was evacuated three or four times during each day, and was occasionally preceded by a colicky sensation. On the 20th, the instrument was again applied for the third time, after an interval of six days from its last application, when the propeller, as on the former occasion, was steadily pressed against the septum, so as to push it still half an inch farther from the artificial opening than on the previous application. It was retained in that position for twenty-five minutes, but as she appeared to experience some slight colicky sensations during its retention, it was consequently removed. On the following day the evacuations from the rectum were observed to be less frequent and more solid than any she had passed by the natural opening since they had taken that course, whilst the discharge from the artificial anus was perceptibly lessened in quantity. From this period the evacuations were voided partly by the natural opening, and partly by the artificial anus, until the 27th, when the entire of the feculent matter had taken the ordinary course by the rectum, and the artificial aperture had contracted to the size of a large pin-hole, through which some flatus and a thin yellowish fluid occasionally passed, so as slightly to stain the dressings which covered it. On the 2nd of February, it was touched with strong nitric acid, and a slight degree of pressure was made on the part by a small pad and strips of adhesive plaster. On their removal after three days, the

opening was found completely cicatrized, and the excoriation, which had given her so much uneasiness, had assumed a healthy appearance, and was completely covered with cuticle in a few days afterwards by the application of zinc ointment. From this period the intestine accurately performed all its functions, and her strength and flesh rapidly returned, although she consumed less food daily than when the artificial anus was open.

[The patient continued to do well, and at the date of Mr. Trant's report, four years subsequent to the operation, she was pursuing a laborious occupation. She was, however, recommended to wear a truss.

The projecting ridge of the intestinal wall separating the two portions of intestine, which open at the artificial anus, was named by Scarpa promontario, and by the French surgeons *eperon*. This prominent ridge constitutes the obstruction which interferes with the direct passage of intestinal matters from the upper to the lower opening in the tube, and in some instances it constitutes a complete valve, altogether preventing the entrance of alimentary matters into the lower portion of intestine, and conducting them to the exterior of the body by the preternatural opening. Desault attempted to push back the obstructing ridge by linen tents, and Dupuytren devised an instrument for effecting the same object, but with so little beneficial effects, that he soon abandoned its use. (See Teale on Hernia, p. 187.) Mr. Trant has rendered great service to surgery, in having constructed a much more perfect instrument than that of Dupuytren, and in having employed it with signal success.



In the accompanying wood cut, we have endeavoured to illustrate this subject. In the first diagram, E represents the éperon, or portion of intestine, which projects downwards, in such a way that the contents of the upper portion of the bowel must necessarily escape at the artificial anus, being conducted there by the éperon, which thus destroys the continuous course of the alimentary canal. But if this projection, which may vary considerably in shape, be pushed out of the way, as it appears to be in the second diagram, by Mr. Trant's instrument, the continuity of the canal is preserved, and the contents will find their way downwards to the natural outlet. It is evident that the size of the instrument

must be varied according to the size of the artificial anus, which in Mr. Trant's case was not above the size of a sixpence, and which generally has a disposition to contract.]

Dublin Medical Press, May 14, 1845, *p.* 305.

ORGANS OF URINE AND GENERATION.

156.—ON LITHOTRITY.

By Sir Philip Crampton, Bart., &c. &c.

[The way of arriving at a correct conclusion as to the relative advantages of lithotomy and lithotrity, can only be by a careful investigation of the results of the respective operations. Mr. Key has led the way in this true path of enquiry. Sir Philip Crampton in an introductory lecture at the Meath County Hospital last year, gives the result of 40 years practice, during which time he has himself operated on 68 individuals—on 49 by lithotomy, and on 19 by lithotrity, and on two of these by a combined operation, consisting of lithotrity and cystotomy, or rather by what Dr. Willis calls lithectasy, by which he means opening the membranous part of the urethra, and dilating, but not dividing, the neck of the bladder, after the calculus has been crushed by the lithotrite.

It is to M. Civiale that the honour is due for having first constructed and then successfully applied an instrument for crushing and reducing to powder a stone in the bladder of a living man, and the Academy of Medicine hailed him as the *inventor of lithotrity*, a title which Sir Philip Crampton considers justly due to him, although it is to Heurteloup that we are indebted for the invention of lithotripsy, which is]

The seizing of the stone with a two-branch curved instrument, instead of a three-branch straight one, and reducing it to fragments by means of repeated blows of a hammer. This is the *percuteur courbe a masteau* of Heurteloup, and it is, beyond all comparison, the best instrument that has as yet been invented for pulverizing calculi in the bladder; and this is true, whe ther the effect be produced by percussion, when the branches are closed on the stone, by the blows of the hammer, or by compression, as when they are closed by the action of the screw. The best proof of the superiority of the *percuteur* to the three-branch instrument, is the fact that it is the instrument which is now exclusively employed by Civiale and by every lithotritist in Europe and America. In justice to a most ingenious artist it is but fair to state, that an instrument in all material points identical with the Baron Heurteloup's wa s

invented and executed by Mr. Weiss, of London, so early as the year 1824. Whether or not this instrument of Mr. Weiss's suggested the curved *percuteur* to the Baron is more than I will venture to decide, for nothing is more natural or of more frequent occurrence than that two ingenious men, whose minds are working on the same subject, should hit upon the like contrivance to effect the same object. That Mr. Weiss did not take his idea of the two-branch instrument from the Baron is certain, because we have the unquestionable evidence of Sir B. Brodie as to the fact of his having seen the instrument with Mr. Weiss in 1824; and the character of the Baron for high-mindedness and candour must place him beyond the reach of suspicion, that he pirated the invention of Mr. Weiss.

[The first case of lithotrity performed in Ireland, was by Sir Philip Crampton, in 1834, in the Meath County Hospital. The operation was only repeated once, and in less than a week's time the whole of the detritus had come away. Sir Philip asks what is the problem which lithotrity has to solve? According to Civiale it is as follows:]

1st. The reducing of calculi within the bladder into fragments sufficiently small to be discharged or removed through the natural passage.

2ndly, The effecting this by such means as shall excite no dangerous irritation in the urinary organs.

3rdly. The freeing the bladder or urethra from the fragments which these organs may not have the power to expel.

[The best instrument for performing the operation of lithotrity, is Baron Heurteloup's or Weiss's curved *percuteur*. The late Mr. Oldham improved this instrument by carrying out a suggestion by Sir Philip Crampton, by which fragments of the calculi are prevented from accumulating between its jaws. The invention of the screw is due to Mr. L'Estrange, of Dublin. Sir Philip in proceeding to speak of the operation, observes that:]

The preparation of the patient is general and special.

The general consists in light diet, abstinence from fermented liquors, free bowels without purging, the use of the hip bath; if the urine be acid, administering alkalies combined with uva ursa or Peruvian bark, and Vichy water; mineral acids when the urine is alkaline, and the infusion of Pareira brava when there is mucous deposit; also absolute rest; with occasionally anodyne enemata.

The special preparation may be summed up under the heads of gradual dilatation of the urethra when necessary; division of its orifice, when preternaturally contracted; and the frequent introduction of the catheter; on this latter I lay the greatest stress, as, if properly conducted, it allays the irritability of the urethra an the bladder.

Here, says the Editor of the *Dublin Quarterly Journal of Medical Science*, Sir Philip Crampton demonstrated the position of the patient

on Heurteloup's bed, and proved that a fixed point in the instrument is not only unnecessary but dangerous. He also exhibited Amussat's hand vice, applicable when percussion by the hammer is employed, and showed the mode of injecting the bladder, cautioning his hearers against the too rapid introduction of the fluid—more than one fatal case having arisen from this cause. In executing this manœuvre the water should be so slowly introduced as to imitate in some degree its descent from the kidneys. In performing the operation the various steps of seizing the stone, and how it was effected, were gone through, as well as the removal of detritus from the bladder, by means of the lecturer's invention of the exhausting apparatus.* He also showed the mode of removing fragments from the urethra by cutting down upon them, as well as by means of Leroy's jointed curette.

[A much more important consideration than the mere mechanical part of lithotrity or even the skill of the operator, is, the selection of cases proper for the operation, since there are many in which it would not only be unsuccessful, but fatal; at the same time we should bear in mind that it may, and has succeeded in those cases where cystotomy would certainly prove fatal; as where the patient is labouring under phthisis, albuminuria, or extensive disease of the liver. And should the stone be so large as not to admit of extraction through the perineal opening, then lithotrity or lithectasy may afford relief.]

It appears, then, that cystotomy and lithotrity are not to be considered as rivals, and that the question, as to which of the opera-

* The apparatus consists of a strong glass vessel of an oval form and six or eight inches in length by three in diameter, and capable of holding about a pint and a half of water; to this vessel is attached a tube of about half an inch bore, furnished with a stop-cock. The air being exhausted by means of an exhausting syringe, and one of Heurteloup's wide-eyed steel evacuating catheters being introduced into the bladder, it is next attached to the exhausted vessel; the stop-cock is then turned, and a communication being thus established between the bladder and the glass, the pressure of the atmosphere is by this means brought to bear on the bladder, and supplies an expulsive power, which may be increased to any required amount. The lecturer stated that he had an opportunity of testing the efficacy of this instrument in the presence of Mr. Liston, on the case of Mr. Rodger, a gentleman of past seventy years of age, who had been twice operated on by Baron Heurteloup. Sir Philip operated a third time, and emptied the bladder (which for several years had been *totally* deprived of all expulsive power) of the whole of the detritus. Mr. Rodger lived for three years after the operation, and suffered no return of the calculous affection. Sir Philip repeated the experiment in our presence with complete success, upwards of two drachms of pulverized calculus having been drawn at once from the bladder into the glass globe. This apparatus is extremely useful in clearing away the detritus from the bladder, when its expulsive power is impaired or destroyed; so frequently the case in elderly people.—Ed. Dub. Journal.]

tions should be the rule and which the exception, should never be brought into discussion; each operation has its special province, the boundaries of which (if indeed they admit of being fixed at all) can be determined only by a comparison of a vast collection of facts, carefully noted, and, above all, faithfully reported, and properly authenticated.

[It may be asked in what estimation is this operation held in England? The following is the opinion of Sir Benjamin Brodie in his lectures on Diseases of the Urinary Organs.]

"It is due to you," says this sagacious practitioner, "that you should be made acquainted with the unfavourable circumstances which may attend on this mode of treatment; but you are not to suppose that it often happens that these exist to any considerable extent, or that the probability of their occurrence is sufficient to counterbalance the great advantages which the new operation often presents over that of lithotomy. It would be a great error to represent it as preferable on all occasions, but it is so in a great many instances.

In boys under the age of puberty lithotomy is so simple, and so generally successful, that we ought to hesitate before we abandon it for any other kind of operation.

"There is also a manifest objection to lithotrity in these cases, on account of the small size of the urethra, which is such that it would not admit of the introduction of instruments of sufficient strength to crush a calculus of more than moderate dimensions.

In the female sex the extraction of a calculus from the bladder by the ordinary methods is attended with little danger; while the operation of crushing it is rendered difficult, in consequence of the short and wide urethra allowing the water which has been injected into the bladder to escape by the side of the lithotrity-forceps before the operation is completed.

In cases in which the calculus has attained a very large size, it is often difficult to seize it with the lithotrity-forceps; the operation of crushing requires to be repeated a great number of times, so that many weeks may elapse before the cure is accomplished; a larger quantity of fragments is left in the bladder, of which the necessary consequence is a great liability to inflammation of the mucous membrane; and of course the inconvenience produced by the passage of the fragments along the urethra is multiplied, as compared with what happens when the calculus is smaller. These circumstances form a sufficient objection to the operation of lithotrity in these cases. It is true, that they are unfavourable cases for lithotomy also; but I have little doubt that the latter method is the safer of the two. It admits of a question, whether, in such cases, the two modes of operating may not be advantageously combined, the calculus being crushed into three or four pieces first, and extracted by the usual incision afterwards.

The operation of lithotrity, as I have already observed, is not well adapted to those cases of enlargement of the prostate gland,

in which the patient is enabled to empty the bladder by his own efforts, unless the calculus be of a small size, so that there may be no great difficulty in washing the minute fragments. into which it had been crushed, out of the bladder, through a large catheter.

There is also another objection to the operation in some cases of enlargement of the prostate, viz., that the tumour which projects from it into the cavity of the bladder, makes it difficult to elevate the handle of the forceps sufficiently to seize the stone easily in the usual manner.

[Mr. Liston, who ranks so high as a lithotomist, is less in favour of the operation, than Sir Benjamin Brodie. The most recent writer on the subject in England is Dr. Willis.]

Speaking of the supersedence of the cutting operation, he says, "such a substitute was, in its first introduction, and for a considerable time afterwards, believed to have been discovered in lithotrity. But this is beyond all question a rotten staff, which, leaned upon by all who suffer from stone, will certainly fail five-sixths of the number; nearly one-half will find that it is totally inapplicable to their case; from one-third to one-fourth will fall immediate victims to its determined application; and from one-third to one-fourth will escape to lead miserable lives from diseased bladder, and then die of diseased kidneys: not more than one in three or four of all who were held favourable subjects will find it a safe, effectual, and final remedy for their disease. The public and professional mind has been singularly abused in regard to the value of lithotrity as a general means of treating stone in the bladder."

This is a terrible picture; nevertheless, I believe, if applied to lithotrity, considered and employed as a *substitute* for lithotomy, it is not too highly coloured. Dr. Willis supports his opinion by a reference to what he considers as *authentic* documents (for when *unfavourable* to the operators, and given by themselves, they may be safely so considered).

[It is from a number of unsuccessful cases that Dr. Willis derives his data as to the circumstances under which this operation is admissible or inadmissible.]

"Lithotrity," he says, "is admissible, and *only admissible*, in cases in which the bladder is perfectly healthy, and in which the stone is small, of the size of a filbert, a shelled almond, or it may be, a nutmeg at the utmost; under all other circumstances it ought to be held impracticable. In other words, lithotrity is admissible where it is estimated that the stone can, at one sitting, be seized and reduced to fragments of sufficient minuteness to be passed by the urethra. No second, certainly no third operation ought ever to be contemplated; if the patient who has had lithotrity performed on him, is not relieved at once, he is in *imminent danger of losing his life*. Lithotrity, I do not hesitate to say, has now been

fairly tried, and found wanting as a general means of relief for stone. Restricted to the circumstances just indicated, it is a great addition to our chirurgical therapeia; applied indiscriminately, and as a substitute for lithotomy, and all other means of dealing with stone in the bladder, it is a most fatal present made to humanity."

Now, it must be remembered that Dr. Willis draws his conclusions from documents which have reference chiefly, if not altogether, to the original operation with the three-branch instrument, and the drill, as invented, or at least first practised by Civiale;—but even as applied to this operation, *under the limitation so clearly pointed out by Civiale*, his picture is, I should say, too highly coloured, but if applied to the operation as *now* performed with Baron Heurteloup's *percuteur*, I have no hesitation in saying that it is far from being a correct representation of lithotrity; and this I am in a condition to prove upon unquestionable evidence—evidence which I am not afraid to say is the most exact that has yet been offered on any disputed point of surgical practice. I propose, then, to take a period embracing the last eleven years, and to give a list of every case of stone in the bladder on which I was consulted during that time. I will then give the particulars of each case, including an account of the operation (if any) which was performed for its relief, together with the result of the operation at the time, and the issue of the case up to this day; and, finally, the actual state of the patient shall (wherever it is possible) be confirmed by his own testimony. By giving a catalogue *raissonne* of all the cases, whether treated by lithotrity or cystotomy, you will be far better enabled to judge of the description of case to which each operation is respectively applicable, than by the most elaborate generalities.

From May, 1834, to September, 1845, I have had to deal with thirty-four cases of stone in the bladder, of which four were females, and twenty-nine were males. All were adults, with the exception of two boys, one of ten years of age, and one of six; they have been disposed of in the following way.

Two—the Rev. Gideon Ousley, aged eighty-one, and a gentleman who resided at Coolock, but whose case I did not note—were set aside as unfit for any operation; both had diseased bladder and kidneys.

Four were sent to Baron Heurteloup, and were cured by lithotrity. See the Baron's Treatise on Lithotrity, in which those cases are detailed.

Twenty were operated on by me by lithotrity; and nine ditto by cystotomy. Total, 35.

Of those operated on by lithotrity all were adults.

Of those operated on by cystotomy three were under twelve years of age, two boys and a girl.

Six were adults and males.

All that were operated on by lithotrity were cured, with the exception of Clarke, and in his case the operation cannot be said to

have failed, because it was performed for the express purpose (as stated in a clinical lecture which preceded the operation) of bringing the stone into a condition to be removed by lithotomy, and this the operation fully effected; the man lived for three months after the last operation by lithotrity, and died of rupture of the stomach caused by an excess in drinking.

In the case of the Rev. Mr. Druett, the operation (as far as it went) was perfectly successful; the cure was not completed from causes that had no reference to the operation.

All that were operated on by cystotomy recovered. Major Percival, it is true, died three months afterwards, of inflammation of the kidney and testicle, but the wound had nearly healed. It is right to observe that six months previous to the operation, Major Percival had suffered a similar attack of inflammation of the kidney, attended with suppuration, which reduced him to such a degree that no expectations were entertained of his recovery.

It appears, then, that of the thirty-three patients operated upon, nine only were submitted to cystotomy (about one-fourth); it is not, however, to be inferred from this statement that out of any given number of cases of calculus only one-fourth should be operated on by cystotomy; such a conclusion would be manifestly erroneous, for if ten or twelve of the twenty-four operated on by lithotrity, instead of being adults,were children and old persons, the proportions might probably be reversed, and the cases suitable to lithotrity might be reduced to ten or twelve, and the difference placed to the credit of cystotomy—and this affords a striking illustration of the utter uselessness (not to say absolute mischief) of drawing any inference favourable or unfavourable to lithotrity from a statement (however accurate) of the mere *numbers* operated on, without reference to the *circumstances* of each particular case. It is on this account, that I have ventured on the somewhat unusual course of giving a detailed and authenticated list of every case of calculus that has been presented to me within a period of eleven years (commencing at the time at which I began to practice lithotrity), with the circumstances of each case and the result, up to the present day. The numbers (I admit) are very far from being sufficient to justify any general conclusion being drawn as to the respective value of the old and new operations, but they are sufficient to establish some points of great practical importance upon which surgical opinion is still much divided.

1st. It is abundantly proved that lithotrity may be successfully applied to cases which are considered to be beyond the domain of cystotomy.

2nd. It has been proved that, in certain cases, to which neither cystotomy nor lithotrity are applicable singly, the combination of the two operations (and especially the combination of lithotrity with lithectasy) may be employed with success.

Finally. It is proved that when the urinary organs are in a healthy state, stones of great hardness, and upwards of an inch and a half in diameter, may be removed by lithotrity with safety.

It by no means follows, however, that in such cases, lithotrity is *always* to be preferred to cystotomy; the choice of the operation must often be determined by various considerations (not purely surgical) connected with each particular case, and having reference to the operator as well as to the patient. A very skilful and successful cystotomist may not have sufficiently practised lithotrity to qualify him to perform it with the same chance of success with which he might perform cystotomy; and a patient who might be able to make up his mind to suffer one operation, however painful or dangerous, might be quite unequal to the effort of submitting to several comparatively slight ones.

In addition to the morbid states of the bladder, so well described by M. Civiale, I should say that a contracted and irritable urethra, an enlarged and irritable prostate gland, and, above all, a constitution prone to sympathize with a disordered state of the urinary organs in general, and with the urethra in particular, a large and very hard stone, or numerous small ones, forbid the application of lithotrity, and bring the case within the proper domain of cystotomy.

Lithotrity is in general considered as inapplicable to children under fifteen or sixteen years of age, on account of the narrowness of the urethra in early life, and the comparative safety of cystotomy in young subjects; but, considering that in children the urethra is (except at its external orifice) highly dilatable, and that the most violent symptoms of calculus in the bladder are often created by the presence of a stone so small that it might with the greatest facility be crushed, and the fragments extracted, at a single operation, I cannot but hope, that at no distant period the operation of cystotomy will be superseded by lithotrity, in a great proportion of cases of calculus in children.

But a few days since Mr. Cusack performed cystotomy on a child of three or four years of age, in Steevens' Hospital. The moment he divided the membranous part of the urethra, the stone started out into the external incision, and was removed by the fingers of the operator; only the membranous part of the urethra had been opened, the prostate and bladder were untouched. What a triumph it would have been for lithotrity, and what an advancement in operative surgery, if lithotrity had been applied to this case. The bladder not having been opened the wound was healed in three or four days, and the child was perfectly cured. Nevertheless, it is impossible not to regret, for the sake of the advancement of operative surgery, which is immeasurably improved by everything which renders operations more safe and less painful, that lithotrity had not the merit of this cure.

[The opinion Mr. Liston expressed of lithotrity in his Elements of Surgery in 1840, it is due to him to state, is now much modified.]

Dublin Quarterly Journal of Medical Science, Feb., 1846, *p.* 1.

157.—*On Lithotomy with Albuminous Urine.*—By B. PHILLIPS, Esq., Assistant Surgeon to the Westminster Hospital.—[Mr. Phillips describes an interesting case of lithotomy, performed upon a patient whose urine was so highly albuminous, that, on the application of heat, nearly one-fourth of the fluid in the tube became solid; there was also a slight excess of lithate of ammonia present. When the patient came under Mr. Phillips' care, he was much afflicted with the ordinary symptoms of stone; the bladder was very irritable; he was fifty-six years of age. A consultation was held on the case, and it was decided that the presence of the albumen was probably caused by the irritation excited in the kidney by the presence of the stone in the bladder, and an operation was decided upon. Before the operation, the albumen slightly decreased in quantity. The operation is thus described:]

The external incision was made in the usual way, and was about three inches long: when Mr. Phillips got his finger into the wound beyond the second joint, he became sensible of the unusual depth of the perineum; as he could then barely distinguish the staff, and when the finger reached its groove very little of the indicator finger remained out of the wound; added to this, the prostate was so large and so hard that the knife did not easily pass through it, and when it had done so, not more than an inch of the handle remained outside of the wound. The bladder, too, was so small and so intolerant of fluids, that it could not be made to project. Some difficulty was experienced, from the fixed and inconvenient position of the stone, in getting it between the blades of the forceps; when this was accomplished the removal was comparatively easy. A piece of oiled lint was passed into the bladder, to conduct the urine. All went on without drawback till the eleventh day, when he had a rigor, but it did not lead to mischief.

On the 16th day, the urine passed freely by the urethra. For a time the urine was heavily charged with lithates, and the wound became encrusted with them; but under pareira brava and liquor potassæ it was gradually brought to nearly a healthy condition, and on the 16th day the urine which passed by the urethra exhibited only faint traces of albumen when treated by nitric acid and heat.

[In six weeks after the operation, this patient was discharged *cured;* the urine was quite free from *albumen.* Mr. Phillips observes:]

This point is one of great interest in practice, and it has been laid down by an eminent authority, that under such circumstances it is imprudent to operate at all. Whatever may be the value of that rule in other cases, I am by no means satisfied of the propriety of its application in cases of stone in the bladder; and if it had been acted upon in the present case the patient would still be suffering from his disease.

The question is undoubtedly a very delicate one: does the albumen result from irritation within the bladder extending to the

kidney, or is the irritation confined to the kidney itself?—in the one case removable by operation, in the other beyond its reach. I know no test by which we can distinguish between them, but the present case is a proof that such a distinction does really exist, though we are at present unable to detect it.

Medical Gazette, Jan. 9, 1846, *p.* 52.

158.—*On Lithotomy.*—At the meeting of the "Academy of Sciences in Paris, on the 27th of April, M. Leroy d'Etiolles read a paper containing the description of an entirely new system of lithotrity; by this new plan the stone is ground to powder in a few minutes by the oscillatory movements of an instrument, from the central axis of which project in every direction a number of blades and files. This pulverisation will be chiefly applicable to solitary and voluminous concretions, the common method of fragmentation, followed by immediate extraction, still being, in M. Leroy's opinion, preferable when the calculi are small or numerous. Artificial and immediate extraction of the particles of the crushed stone considerably hastens the cure, and has been already used by the author with advantage in upwards of one hundred cases.

M. Heurteloup read, at the same meeting, a paper referring to the same subject. He also advocates the immediate removal of the pulverised calculus, and asserts that this artificial extraction takes up no more time than the operation of lithotomy. M. Heurteloup brings forward, in support of this modification of lithotrity, the possibility of a portion of stone being lost in the bladder after crushing, and becoming inaccessible to instruments; and, secondly, the chances of vesical catarrh, when expulsion of the fragments is left to nature, and the dangers arising from their stoppage in the course of the urethra.

Medical Times, May 9, 1846, *p.* 89.

159.—*On the Use of Iodine in Enlargement of the Prostate.*—By R. A. Stafford, Esq.—The power of iodine and the iodide of potassium in reducing glandular swellings is well known. I have employed it in nearly all cases of enlargement of glands, excepting those from malignant diseases, and have found it of the greatest service; indeed, its use in some instances has been attended by almost a miraculous effect,—so rapidly has the swelling been reduced. It was this circumstance that led me to think it might be advantageously employed to reduce an enlargement of the prostate gland and its middle lobe. I felt it easy to cause it to be absorbed through the substance of the prostate gland, by using it in suppositories passed up the rectum, but the difficulty was, to apply it on the third lobe without touching any other part of the urethra. I made several attempts to accomplish this; first, through a tube; then in a groove at the end of a solid instrument; then by the method by which caustic is applied to a stricture, according to Ducamp's plan, and others; but none of these answered. I at length thought of a very simple mode of applying it, which is by charging a bougie at its

point with the iodine, iodide of potassium, or any other substance you may wish, and then dipping it into melted tallow, so that a coating may be formed upon it. By such method I have been enabled to introduce any application I might desire up to the prostate gland, without touching the surface of any other part of the urethra. The bougie having reached the desired spot, its point is allowed to rest upon the diseased part, when the tallow gradually melts, and brings the iodine or iodide of potassium into contact with it, and by drawing the bougie gently backwards and forwards the necessary friction is produced.

I have found it advisable to be very cautious as to the strength of the application, for the prostate gland will not bear a strong preparation either of the iodine or iodide of potassium, at first. It is usually in an irritable or inflamed state; consequently even the mechanical pressure of the bougie will give pain. The preparations I have therefore used have been very mild. At first I have found it necessary to employ even anodynes, such as belladonna, opium, hyoscyamus, &c. to quiet irritation and pain. When these have subsided, I have begun carefully by introducing the iodide of potassium, in the proportion of one grain to the drachm of unguentum cetacei, and increasing it as the patient could bear it. I have then gone on with two, three, four, five, and even as far as ten grains or a scruple, to the drachm, according as the case required it. After this I have added iodine to it; half a grain, one, two, three, four, and even more grains, in the same manner. The surgeon who applies it can alone judge of its effects. It is requisite therefore that it should be introduced with considerable care. I have known instances where, from the injudicious employment of it, considerable mischief has ensued. Inflammation, ulceration, and retention of urine, have been the consequences. In some instances, also, where patients have fancied they could use it themselves, they, not knowing the anatomy of the part, have misapplied it, and produced considerable hæmorrhage, endangering life.—*From an Essay on the Prostate Gland, by R. A. Stafford, F.R.C.S.*

Medical Times, Feb. 28, 1846, *p.* 440.

160.—*On the Treatment of Venereal Disease.*—By W. Acton, Esq., Surgeon to the Islington Dispensary, and formerly Externe to the Venereal Hospitals of Paris.—[In speaking of the treatment of venereal affections of the scalp, Mr. Acton observes:]

No time should be lost in the local treatment of alopecia. A patient finds much relief from warm baths, particularly when any irritation exists on the scalp. I desire the hair to be cut as short as fashion will allow, but I have never found it necessary to shave the head in the early stages of the complaint, and I question much if this is required, even in the more advanced periods, particularly if proper means be employed to check the disease. They consist in the application of stimulating washes or liniments to the scalp. A very simple and elegant one may be made by mixing equal

parts of rectified spirit, eau de Cologne, and castor oil together. I employ castor oil, on account of its being the only vegetable oil which is soluble in rectified spirit, and the eau de Cologne covers the otherwise nauseous smell of the oil. If a stronger preparation be required, I recommend equal parts of honey-water,* and tincture of cantharides to be rubbed into the roots of the hair every night. The first effect of the spirit-wash will be but slight; in the course, however, of a few days, there will be some redness and irritation, and patients complain of a feeling as if something were drawing their heads, and little blisters will be seen scattered here and there. I need not say the application should be left off before such effects are produced, to be continued at intervals, as the case may require. Under this local treatment the hair will cease to fall off, and all tendency to pityriasis disappear, the young hair will be seen sprouting freely; the spirit, however, will make the hair dry and untidy, particularly as the brush cannot be freely applied from the tenderness of the scalp. I have attempted to combine the cantharides with animal and vegetable oils, in which it is readily soluble, but, by keeping, the mixture becomes rancid; this prevents its employment at the toilet. To obviate the effects of spirit on drying the hair, some form of pomatum or hair oil should be freely used; but this subject I shall allude to in a future paper, when I propose publishing some experiments and investigations, in which I have been assisted by Mr. Jacob Bell, in the analysis of the quack remedies and pomatums adapted for the hair.

The local treatment of the earliest forms of syphilitic affections of the head—that is to say, lichen, lepra, psoriasis, and impetigo, consists in the frequent use of the warm bath, taking care to soak the head well: under this treatment the scales become loose and detached, the skin assumes a healthy character, and the cephalic pains cease; the spots may be covered night and morning with dilute citron liniment, made according to the following formula: olive oil, half an ounce; citrine ointment, one drachm. I am acquainted with no application so efficacious in scaly affections of the scalp; if kept in a well-corked bottle this liniment undergoes no change of colour, said to arise from the nitric acid which is given off when exposed to the air in pots.

In a recent lecture of M. Ricord's, the following pomade is recommended:—Purified beef marrow, sixteen parts; sulphur ointment†, sixteen parts; turpeth mineral, two to four parts; essence of lemons, sufficient to scent it.

The employment of ointment in the treatment of mucous tubercles is very objectionable; cleanliness must be strictly observed;

* The composite of honey-water varies, but, like eau de Cologne, is a highly perfumed spirit; honey does not enter into its composition.

† The sulphur ointment of the Venereal Hospital is made of flowers of sulphur, eight ounces, simple cerate, one pound.

the affected parts washed with a diluted solution of chloride of soda, carefully dried and sprinkled over with calomel. Under this treatment the affection rapidly disappears.

In eczema impetiginodes, and in ulceration of the skin, the hair must be cut close immediately round the affection, and water-dressing applied; or the lint may be dipped in an aqueous solution of opium. Ointment is generally objectionable in all eruptions attended with oozing of fluid, particularly in eczema impetiginodes; the grease, mixing with the secretion, soon becomes rancid, forms a crust, the edges of which become excoriated, and what was the effect becomes a cause of irritation.

In the instances where gummata and nodes occur on the head, the best local treatment consists in painting them over with tincture of iodine: this is also a good application to the edges of unhealthy tertiary ulcers.

Within the last few years, public attention has been called to the preparations of iodine; it has been vaunted above measure by some, and considered valueless by others, in the treatment of secondary symptoms. To quote two authorities only, my readers will judge the difference of opinion on its use. The late and much-lamented Dr. Williams, in his "Elements of Medicine," vol. ii., p. 165, in comparing this new mode of treatment with that by mercury, comes to the conclusion, that "iodide of potassium must be considered as infinitely superior to mercury in the cure of this once formidable disease." Sir B. Brodie, in the *Lancet*, in *loc. cit.*, says, "It is now very much the custom to administer the latter (iodide of potassium) in cases of syphilis. No doubt it is an excellent remedy in some cases, and it comes in to your aid when you have reasons for not giving mercury; but if you ask me whether you can rely upon iodide of potassium as well as upon mercury, I say no. You may remove slight symptoms, by giving it for a time, and severe symptoms, by exhibiting larger doses, but, in the latter case, so far as I have seen, it does not make a permanent cure, for the symptoms return again. As a prophylactic, it is not to be compared with mercury."

Lancet, Jan. 17, 1846, *p.* 69.

[Mr. Acton states that during the last three years he has met with cases where neither mercury nor iodide of potassium did good in the secondary forms of syphilis; and he gives a number of propositions by which the indications for their exhibition may be made as apparent as they now are in the primary and tertiary forms.]

Proposition No. 1.—Secondary symptoms occurring after a primary affection, which have *not* been treated with mercury, are usually *not* in the least degree ameliorated by iodide of potash.

Proposition No. 2.—Secondary symptoms occurring after a primary affection, which have *not* been treated with mercury, will as generally require for their cure the preparations of mercury, given in appropriate doses.

Proposition No. 3.—Secondary symptoms, following sores treated with mercury, frequently persist, in spite of mercurial preparations, in some cases become aggravated, or only yield to very large and dangerous doses of the mineral.

Proposition No. 4.—These symptoms will very rapidly get well under iodide of potash, when administered in proper quantities.

Every surgeon's experience must furnish instances of the truth of the first and second propositions. Amongst many others that have fallen under my notice, I may cite the two following, as cases seen by other practitioners as well as myself:—

E. B—— contracted sores in 1841, and came under my care; simple treatment was employed, and the patient recovered, though leading a very irregular life, within three months. Secondary symptoms followed: a general practitioner was now consulted, who recommended iodide of potash. The disease steadily progressed, although the patient had taken twelve quart bottles of a mixture containing the salt. At this period I was again consulted; the mouth, tongue, and throat, were covered with condylomatous growths, as well as the scrotum, to an extent I have seldom witnessed in private practice, attended with patches of lepra and psoriasis on several parts of the body. I recommended mercury, to which the patient objected; but getting no better, Sir B. Brodie was consulted, who concurred in recommending the free use of mercury; no sooner did this mineral exert its influence, than all the symptoms vanished, and this gentleman has enjoyed uninterrupted health since, is now married, and the father of two healthy children.

A second case, no less interesting, and proving the inefficacy of odide of potash, is that of a gentleman, who in the summer of 1842 contracted what he supposed to be a gonorrhœa. Soon after, a sore appeared on the frænum. This patient being at the time in Paris, was treated by M. Ricord by simple means. After a tour, he returned to England with a few well-marked spots of lepra and psoriasis on the face and body. I recommended mercury, and a few pills were taken. This patient was advised by his friends to consult an eminent army surgeon, who deprecates the use of mercury in syphilis. I did not myself again see the patient, but was told by a medical friend that this gentleman had taken iodide of potash for six weeks, and at that time remained spotted like a leopard.

These, and several other cases I could cite, prove how inefficient is iodide of potash, though employed for a length of time, and seem to bear out the assertion I made in my work on venereal diseases, that secondary symptoms require mercury for their cure. Such a rule I now find, however, to have certain exceptions, which I shall mmediately show, not depending upon this or that variety of erupiion, as some authors assert, but upon the treatment of the previo primary symptoms.

A gentleman, sent to me by Mr. L. Parker, of Birmingham, stated, that twelve months previously he had contracted syphilis.

Mercury was used, but it appeared that the patient's occupations prevented him taking the necessary precautions; secondary symptoms recurred, and it was at this period he came under my care. Imbued with the notion that iodide of potash was not beneficial in the forms of lepra, impetigo, and psoriasis, under which this patient laboured, I employed mercury. He at first improved, then relapsed, admitting that he partook freely of wine. As a consequence, ulceration attacked the alæ nasi, and dreading the occurrence of tertiary symptoms, I immediately gave this gentleman iodide of potash. It acted like a charm, and he is now restored to perfect health, and travelling on the continent.

Another case of this kind came under my care about a year ago. A foreign gentleman, obliged to quit Paris, was recommended to me by M. Ricord; he was labouring under secondary symptoms, consisting of impetigo of the head, a few spots of lepra on the body, and psoriasis palmaris, with a trifling affection of the throat: as my friend, M. Ricord, had ordered the iodide of mercury, I continued the treatment, and although the patient took every precaution, the spots disappeared, only to reappear after slight exposure. Not finding my patient making the progress I desired, I was about to alter the treatment, when this gentleman disappeared for some weeks, and on his return told me he had consulted Mr. Key, who prescribed iodide of potash with marked benefit, for all the symptoms had disappeared save and except some slight stains on the hands. This patient had been treated with mercury in England previous to going on the Continent, on account of an indurated sore, under the direction of an eminent surgeon. I must detail one more case. A gentleman contracted syphilis during the last summer; the sore became indurated, mercury was used and the chancre rapidly disappeared. I hoped secondary symptoms would not occur. Within four months of this contagion, a few spots of psoriasis appeared on the body and scrotum, accompanied with impetigo of the scalp, and the throat was seriously implicated by superficial ulceration. Mr. Lane and myself saw this gentleman, and we determined to give him iodide of potash, after a few doses all the symptoms disappeared, and he recovered, having taken only half an ounce of the salt.

Such cases as these prove most incontestably that secondary symptoms are not always benefited by mercury, as most authors believe, but require iodide of potash; and in collating my cases I find they arrange themselves under these two heads, proving that the surgeon must be particular in ascertaining the previous history of the patient, as furnishing him with the best indication for treatment.

I believe the propositions will be proved founded on facts, at least I may affirm that they are the consequence of cases which have fallen under my notice; and far from theory having led me to draw the conclusions, my previous observations induced me to believe that all secondary symptoms would be benefited by mercury, and it was only by repeated cases of failure I was compelled

to admit that iodide of potash was far preferable to mercury when the latter had been used in primary symptoms. I indulge the hope that similar mistakes will not occur, and that surgeons will be as generally unanimous in this part of the treatment of venereal diseases, as they are that indurated primary sores require mercury, or that periostitis and nodes are immediately relieved by iodide of potash.

[The opinions of the different authorities on the efficacy of the iodide are much at variance, but Mr. Acton, from the experience he had in France, once recommended the use of mercury in all early stages of constitutional syphilis. He has since modified this opinion, and no doubt it has arisen from more extensive experience, and from the fact, that in London, mercury is more generally employed in the treatment of primary symptoms than in Paris, and hence (according to the principle Mr. Acton wishes to establish) the iodide will be of more service in the treatment of the secondary symptoms. This will account for the difference in the opinions of M. Ricord and Mr. Acton on this point, assisted also by the fact that M. R. generally employed the mercury in combination with iodine, whilst in London it is given alone in the form of blue pill, or with chalk. Mr. Acton adds:]

I should further recommend a trial of iodide of potash in those numerous cases which come before us among dispensary and gratuitous patients, presenting secondary symptoms of the head and scalp in some modified form, in persons whose gums betoken courses of mercury, and who tell you that mercury has been given, salivation produced, yet the disease has relapsed. The salt is particularly advantageous to that large class of individuals in whom dissipation, prolonged courses of mercury, and inattention to the directions of a medical man, may be expected. In private practice, when unable to ascertain the previous course of treatment, or when mercury and the iodide have both been given, without any benefit, and your opinion is asked what further remedies are likely to be useful, I usually support the system by improved diet and change of air, and after a short interval, commence a course of iodide of potash, combined with tonics, in the manner I am about to recommend. Persons taking iodide of potash, in the usual manner of prescribing it, complain of pain at the pit of the stomach, and heat at the back of the throat, soon after swallowing the salt. To obviate these objections, I am in the habit of prescribing the salt, in solution, in the following manner:—Two drachms are dissolved in three ounces of water, and the patient is desired to put a teaspoonful of the solution in a large cup of tea, night and morning, and to take the same quantity in half a pint of beer, or any other fluid, in the middle of the day. It is impossible to say how long we should continue the use of the remedy; if, however, as usually happens, the patient gains weight and flesh, a surgeon would do wrong in discontinuing it for some weeks, and the dose may be increased according to circumstances.

I have found it, however, of no use to continue the iodide of potash, or increase the dose, after the first week or ten days, unless some amendment is visible in that period; otherwise we find it producing a hot skin, a parched mouth, and some fever, or we observe acne on the back or face, accompanied with some headache; in other instances, an unusual quantity of saliva is secreted, the gums become puffy, and bleed when the tooth brush is used. These effects should induce the surgeon to omit altogether, or reduce the dose, which may again be resumed when these prejudicial results have ceased.

Ibid. Jan. 31, 1846, *p.* 119.

When a person, presenting any eruptions on the head, consults me, and I find he has not taken mercury for the primary symptoms, I think it only waste of time to employ iodide of potash. Without absolutely affirming that sarsaparilla or other remedies will not cure the affection, I may state they have so often disappointed me, that I now never recommend them, but at once have recourse to mercury, as being the remedy most simple and certainly efficacious.

[The question, and a very important one arises, What form of mercury is to be used? Ricord considers the pure mineral most soluble, as it forms when in the stomach a very soluble bilactate of mercury. Mr. Acton prefers the mercury with chalk. When the functions of the organs of digestion are once impaired by the action of mercury, it ceases to act efficiently, and Mr. Acton at once resorts to frictions. The only objection that can be urged is, the dirt they occasion. All are now agreed that the simpler the form of mercury to be absorbed into the system, the more efficacious will it be; although there is as much difference of opinion as ever as to the *modus operandi* in curing the disease. Mr. Acton observes:]

I desire the patient to smear a quantity of ointment, equal to the size of a horse-bean, on the inside of each calf of the leg or knee, every night, on going to bed; not rubbing it in, as some have recommended, but merely passing the hand from above downwards; by this means avoiding rubbing the hair in the wrong direction, and producing irritation of the bulbs and subsequent tenderness. If this is pursued for a few minutes, the ointment will not be easily detached from the skin when the clothes come in contact with it, and absorption will take place quite readily enough. To prevent the sheets becoming black, it will be only necessary to sleep in old drawers, if the patient usually wears them, or a pair of linen trousers, which may be destroyed when saturated with ointment. Every third or fourth evening the patient should take a warm bath, to remove the stale ointment that may be on the surface of the skin, and absorption of fresh ointment will thus be expedited, and the occurrence of eruptions prevented. I recommend the application of the ointment on the inside of the leg and

knee as being preferable to the inside of the thigh, for several reasons: in this latter situation some of it is certain to be applied by the friction of the trousers to the fold between the thigh and scrotum; the heat and friction, together with the natural secretion of these parts, will soon cause the ointment to become rancid, and eczema, of a most severe form, is constantly occurring, which only declines as we leave off the ointment. It is difficult in these situations, likewise to keep the linen from becoming smeared with the ointment, which, in private, is of the greatest importance, as washerwomen are very curious people, and, proverbially, gossips. If, on the contrary, the ointment be applied to the calves, neither the linen nor the bedclothes will be the least soiled, and it often happens that patients rub in without any of their family being aware of their using this usually dirty remedy.

I believe, in the present day, practitioners commit a great fault in suspending the use of mercury too quickly: so much has been written on the dangers of salivation, that we do not now even obtain the judicious effects of the preparation. We stop short of these; hence the number of relapses, and the surgeon lives in the fond hope that enough mercury has been given, until disappointed by the return of the complaint.

Ibid, Feb. 14, 1846, *p.* 179.

[Mr. Acton gives us some excellent remarks on the use of nitrate of silver. He says:]

Experiments on inoculation have incontestably proved, that if caustic be employed soon after the receipt of the virus, all further effects may be stayed; they have, however, shown, that up to the third day the disease is of a local nature, moreover confined to the parts with which the virus has come in contact, and that it is not necessary to cauterize beyond the extent of the ulcer, but that, on the contrary, the doing so is fraught with great mischief.

If a surgeon will inoculate a man and watch the effects, he will find, that at the commencement he can destroy effectually the virus by the slightest touch of the salt; little or no irritation will follow, and the application may be repeated at intervals. Before we employ nitrate of silver, the part should be carefully cleansed by being soaked in warm water, for the virus may exist on the surface of the neighbouring skin, and if not washed off, will re-inoculate the sore when the little eschar falls, and undue blame will be thrown on the caustic. Although no other ulcer exists at the time of using the salt, frequently, in a few hours after, another sore, or a little pustule, will be met with, which, if precaution be not taken, will go on increasing, and the disease will spread rapidly. These circumstances explain several anomalies which have thrown discredit on caustic. The parts should now be carefully dried, and if it be an excoriation the surgeon is called on to treat, the skin should be put on the stretch, and the solid stick of nitrate of silver lightly passed across it, so as effectually to whiten the surface in

its entire extent; all cracks and crevices must be treated in the same way. If a pustule exists, it should be opened with a lancet, the pus evacuated, and a pointed stick of the nitrate of silver introduced, so as to cauterise the walls of the pustule. For this purpose the caustic should always be kept pointed; and this may easily be done, by wetting it, and rubbing its sides against a piece of soft wash-leather. It is very difficult to obtain a point by scraping the stick of nitrate of silver, in consequence of the brittleness of the salt, and when once obtained, the caustic will retain its pointed character.

If the surgeon is called upon to treat chancres at the orifice of the prepuce presenting the appearance of cracks, he must draw back the prepuce gently, when he will be enabled to cauterize the entire extent of the chancre, but in repeating the operation, let him guard against breaking through the cicatrix, or this linear chancre will extend, the same observation applying to the treatment of chancres on the frænum; and to obviate the difficulty of healing such ulcers, I usually divide the frænum, and cauterize the entire of the divided surface. Without these precautions, it may be weeks before you will heal such sores. Reliance must not be placed alone on the salt, and previous ablution, but extension of the diseases should be stayed by lotions of an astringent kind; the one I prefer is a solution of pure tannin, in the proportion of two grains to the ounce of water, which not only checks the discharge, but seems to tan or harden the skin: the private patient, however, should be told, that this solution slightly stains his linen with a brown mark, or the lotion may tell tales to the family; to obviate this, a weak solution of sulphate of zinc may be employed, or, if desirable, dry lint; but dry lint has the objection, in some instances, of irritating the part, and, moreover, the little eschar is a long time in falling, and we are therefore prevented re-applying the caustic.

We now come to consider how soon the caustic should be re-applied. The rule I follow is to employ it as soon as the eschar is removed, and this will vary in many cases; generally speaking, it is sufficient to cauterize once in 24 hours, particularly if the sores be numerous or large. More frequent applications might be useful, did they not produce irritation, and should swellings of the prepuce arise, the mischief will be greater than by allowing the disease to run its course, as we should be then unable to employ ablution: before removing the lint, let the part be well soaked, or the little eschar may be detached, and the part made to bleed: it will then be only necessary to dry it and apply the caustic as before, very slightly.

I alluded above to the pain occasioned by caustic, When applied to a surface of considerable size, generally speaking, pain is very acute for a few minutes. I have known a few susceptible persons nearly faint from its effects; they describe it like what molten lead might be supposed to produce if thrown on the skin; but this gradually ceases, and a person is unaware that any soreness exists, unless the part be pressed or rubbed against: so much is this the

case, that many patients are glad to have a chancre burnt, as the caustic destroys the morbid sensibility usually met with in syphilitic sores, dependent apparently on the ulcerative process going on, if not checked by nitrate of silver; and before 24 hours pass, this sensibility will return, and be again relieved by caustic. When the salt has been applied on several successive days its application is scarcely felt.

I shall be asked, perhaps, how long these repeated applications of caustic must be continued. In private practice, where we see cases early, or during the first day or two, one or two burnings will suffice; but in the more advanced stages, it may be necessary to continue them at intervals of 24 hours,—for a week or ten days, in fact, as long as we believe any virus is secreted by the sore; and this is known by the ulcerative stage continuing, by the surface being covered with a yellow, chamois-leather-looking pellicle; whereas, when the virus has been effectually destroyed, the ulcers do not remain stationary, but become every day less and less in size, and healthy granulations spring up; in these cases it is better to omit the caustic, as it may prevent cicatrization, but we must have recourse to it again if the sore regains any of its specific characters.

The surgeon will occasionally be disappointed in finding chancres progress less favourably than here stated; in spite of all his attempts to cure them, caustic fails; this is more especially witnessed in ulcers situated around the narrow prepuce, at the frænum, orifice of the urethra, or fourchette in the female; it is the situation of the sore rather than the want of efficacy in the remedy that prevents cicatrization; rest and attention to cleanliness, without rupturing the cicatrix, will alone bring about a cure; in these instances it is in vain to continue the caustic; its objects can be no longer attained, and it produces much mischief.

Ibid, *April* 25, 1846, *p.* 457.

161.—*On the Treatment of the Secondary and Tertiary Form of Syphilis.*—By M. Ricord.—[It is of considerable importance as to what preparation of mercury we are to use in the treatment of the secondary or tertiary forms of syphilis. Those preparations act most rapidly as mercurials the nearer they approach to the crude state; but contrary to Mr. Acton and Sir B. Brodie, M. Ricord thinks these are to be avoided, and the most valuable form is that, the action of which holds a medium place between those forms approaching the crude state and the more soluble compounds. M. Ricord prefers the protoiodide; it does not too rapidly salivate, nor produce a local caustic action; occasionally it may occasion diarrhœa, which will cease if it be withdrawn. It is never attended with the gastric symptoms, following the use of the bichloride. M. Ricord observes:]

We prefer, generally speaking, the proto-iodide of mercury. Although a mild preparation, some persons cannot take the smallest dose alone, without being seized with diarrhæa. When this

unfavourable predisposition exists, a more or less considerable quantity of opium must be added. Opium is an excellent corrector, and is the substance specially indicated in all cases in which mercury acts too rapidly or too locally on the digestive tube. Some authors have asserted that opium is an impediment to the specific action of mercury, a statement which we believe to be clinically untrue. So little is this the case, that their joint administration gives rise to the disappearance of syphilitic symptoms, even more rapidly than that of mercury alone, because the opium enables the mercury to be borne, and to exercise its specific influence. There is an enormous difference between mercury given alone, and acting as a purgative, or giving rise to intestinal salivation, and mercury given with that dose of opium which ensures its being tolerated.

With some patients, instead of occasioning diarrhœa, mercury gives rise to constipation, concentrating the intestinal vitality on the superior portion of the digestive canal. If the mercurial preparation contains opium, as is generally the case with our formulæ, we suppress it, lest the action of the mercury should fly to the mouth, and occasion salivation. Should the constipation still persist, a slight laxative ought to be given.

Antiphlogistic treatment has been lauded, as a means of assisting the action of a mercurial treatment, or even of replacing its specific action. Such a doctrine can only lead to deplorable results. Syphilis, in poisoning the economy, exercises its deleterious influence on the blood, the composition of which it modifies, reducing the number of the globules. This is now an undeniable fact. Bleeding acts precisely in the same way, by diminishing the globules, whereas one of the most important conditions for the due efficacy of treatment is, that it should not produce the same lesions as the disease. There is, however, now no difference of opinion on the subject; it is generally admitted, that unless there be an absolute necessity, owing to the presence of accidental phlegmasiæ, bleeding ought to be severely proscribed in the treatment of constitutional syphilis.

What ought to be the regimen of patients undergoing a mercurial treatment? The same reasoning applies here as in the treatment of primary accidents. During the treatment of constitutional syphilis, all stimulants should be avoided, solid as well as fluid. The diet ought to be simple, and modified according to the general state of health of the individual. Generally speaking, however, the diet of patients labouring under constitutional syphilis ought to be rather strengthening than debilitating. Syphilis weakens, deteriorates, and destroys the organization. A mild, strengthening regimen, therefore, as a general rule, must be the basis of our treatment. In these diseases, other hygienic conditions, such as residence, &c., should not be overlooked. The rules laid down for the general treatment of scorbutic and scrofulous patients apply equally to that of the syphilitic: cold and damp are equally prejudicial to them. They should neither expose them-

selves unnecessarily to the influence of these depressing causes, nor should they remain closed up in a room, protected from the influence of the air.

Lancet, Jan. 10, 1846, *p.* 31.

[Those remedies which have ranked so high, such as sarsaparilla guaiacum, squina, and sassafras, M. Ricord considers possess no antisyphilitic properties at all. He considers sarsaparilla as one of the most fallacious antisyphilitic remedies, and when, in his practice, he wishes to suspend the treatment of a patient for a few days, he gives the decoction of sarsaparilla without the disease being influenced in the slightest degree. He adds,]

The preparations of gold have been, and are still thought, by some practitioners, to possess great efficacy in the treatment of secondary syphilis. The experiments of Cullerier and Bielt, however, prove that they have little or no influence over the diseases of which we are treating. In the great majority of cases in which they are administered, they exercise no influence whatever on the disease, and in the very few instances in which they appear to dispel the morbid symptoms, it is difficult to say whether it is the treatment or nature that has produced this result, for we must not forget that the phenomena of secondary syphilis may disappear without any treatment being had recourse to.

Preparations of silver have, likewise, been employed with the same want of success in the majority of cases, and the same uncertainty as to their real value in the very few in which the symptoms give way whilst they are being administered.

Does the iodide of potassium succeed in the treatment of secondary syphilis? It has been proved that it may sometimes produce rather favourable results. When Wallace published his first facts relative to the use of the iodide of potassium in syphilis, he employed the salt in all the periods of the disease, against all its forms and all its symptoms. He often obtained favourable results, but in some periods of syphilis, they were so variable that this precious medicine, would, no doubt, have fallen into oblivion, if Wallace had been entirely believed. I have contributed my share towards establishing the reputation which the iodide of potassium now enjoys. I was the first to point out when it ought to be employed, and against the symptoms of which period of the syphilis. I have demonstrated, in the most positive manner, that the iodide of potassium is a remedy which cannot at all be depended upon in the treatment of secondary symptoms; indeed, it seldom succeeds in dissipating them. It nearly always fails, and is as weak as mercury is strong. Moreover, it sometimes increases, exasperates the morbid phenomena, and when it is not noxious it causes us to lose valuable time. I do not assert that it has never succeeded, but that it cannot constitute a special and complete treatment.

Hydro-therapia (the water cure) has been praised in the most enthusiastic manner. I have tried it, and repeatedly seen the second phenomena disappear under its influence; but this treatment is of all the most momentary, the most fugitive. In a very short time the morbid phenomena again appear. The most useful therapeutic agent is that which overpowers, keeps at bay the longest, the syphilitic diathesis, and which prevents its re-appearing the longest, and that mercury does.

Lancet, Jan. 17, 1846, *p.* 65.

Tertiary symptoms may be said to be essentially characterized by not being transmissible hereditarily. When syphilis has arrived at this stage, it seems to lose its specific character, and to constitute a cachexia, having a certain affinity to scrofula. I believe it, indeed, to be the most frequent cause of that malady. The constitution is deeply modified after passing through the different stages which intervene between the first manifestation of the primary sore and that of tertiary disease. The affiliation cannot always be traced, although, no doubt, it always exists. The secondary symptoms may not have been perceived, or may have been forgotten. Thus, when transmitted by heredity, secondary symptoms appear within five or six months after birth, and subsequently disappear, whether treated or not. They may not be recognised by the parents; and yet tertiary symptoms supervening, the latter may appear to occur primarily.

Mercury may prevent the manifestation of tertiary symptoms, or modify them when they have appeared; but because it does not always prevent their occurrence, we are not warranted in concluding that it causes them, or that they are the result of the combined influence of mercury and syphilis, as has been asserted by many pathologists. They have been repeatedly observed on persons who have never undergone mercurial treatment—a fact which decides the question.

It is generally believed that tertiary symptoms are more serious and more difficult to cure in patients who have taken mercury than in those who have not; and, among the former, more difficult to overcome the greater the amount of mercury taken. The explanation of the fact may be easily given. The disease is most difficult to cure in such persons because they are precisely those on whose economy syphilis has the firmest hold, and who have been, consequently, all along, the most rebellious to the action of mercury.

Tertiary symptoms are more serious than secondary, for the older syphilis is, the more formidable it becomes, and the more firmly does it establish itself in the economy which it deteriorates. Mercury, when it is not the most precious and the most efficacious of medicines, is a dangerous remedy, often, indeed, a violent poison. When it does not cure, it does not remain innocuous; on the contrary, it injures and debilitates the constitution. Now, syphilis is the more formidable, the weaker the constitution on which it acts. In this sense, the abuse of mercurial preparations

may be followed by deplorable results, as it places the patient in the most deplorable circumstances for the development of tertiary phenomena. But, although, in diminishing the quantity of fibrine in the blood, which mercury does, you weaken the constitution, you cannot, by such means alone, produce tertiary symptoms, with their peculiar characteristics. The caries, which may be occasioned by carrying mercurial stomatitis to its last limits cannot be confounded with the caries of tertiary syphilis. Between the one and the other, there is the greatest possible difference.

Tertiary syphilitical symptoms rarely manifest themselves within six months of the primary infection; this is the inferior limit. As to the superior one, the longest term after which they may appear it is impossible to fix. No tertiary symptoms have been known to occur, ten, fifteen, or twenty years after infection, or even after a still longer period. It rarely happens, however, when the interval is so lengthened, that the patient has not experienced some intermediate symptom. There has, nearly always, been a thorn somewhere, some local ailment, notwithstanding that the general health has been excellent. Suddenly, a tibia becomes painful, a testicle swells or melts, or an exostosis appears. A syphilitical exostosis has, however, never been known to develop itself eight, ten, or fifteen days after the manifestation of a chancre. In some rare cases, I have seen patients at the third, fourth, or fifth month, present phenomena which occupied a medium position between secondary and tertiary syphilis, and which, subsequently, became evidently tertiary; but they were exceptional cases. Tertiary accidents are principally situated in the sub-cutaneous or sub-mucous cellular tissue, in the fibrous, osseous, cartilaginous, muscular, or nervous tissues, and in organs in their locality. One of the principal characteristics of tertiary syphilis is its tendency to concentrate itself in the internal organs.

Lancet, Jan 31, *p* 116.

162.—*On the Repellant Treatment of Buboes.*—By WILLIAM HARGRAVE, M.B.—[Any plan for preventing the suppuration of buboes, or, if matter should form, of preventing the formation of sinuses, is worthy of attention. Dr. O'Ferrall has adopted the plan of M. Malapert, which he has somewhat modified, in the hope of preventing suppuration.]

The method pursued by M. Malapert is to apply a small blister about the size of a crown to the most prominent surface of the bubo for twenty-four hours, then carefully raise the cuticle for about the same extent, and to apply a pledget of lint of a corresponding size, well saturated in a solution of bichloride of mercury, in spirits of wine of the strength of a scruple of the salt to one ounce of the spirit, and to retain it *in situ* from two to four hours by a bandage, after which cold applications, medicated or otherwise, are to be used for some hours. A thin brown eschar is the result of this treatment, which is thrown off in some days, when

the tumour will be found dispersed. M. Reynaud has also adopted this treatment for dispersing buboes, not only in the incipient stage, but also when suppuration has been incontrovertibly established.

[The following case shows the advantage of this method of treatment:—The patient, a young man of temperate habits, contracted a gonorrhœa, for which he took, for six weeks, occasional doses of balsam of copaiba: a bubo formed in each groin, the left one was lanced, and the matter evacuated. He was admitted a patient of the Meath Hospital on the 2nd of March. The treatment was as follows:]

March 4th. The cuticle was removed from the blistered surface, and lint steeped in the solution of bichloride of mercury was kept applied to the denuded surface for four hours; afterwards the cold lotion was constantly used.

7th. A poultice was directed for the bubo in the left groin, which presented a superficial slough corresponding in size to the action of the mercurial agent; the right one, which was discharging freely, was dressed with the ung. iod. plumbi. This treatment was continued till the 13th, when the slough was cast off from the left one, and both were then dressed with ung. calam. From the 16th to the 18th, attempts were made to contract the extent of the right one by adhesive plaster and the uniting bandage. At this date the surface of the left one was completely healed, but as there was evidence of some fluctuation still in it, a blister the size of a shilling was applied: on the 19th, the mercurial solution, when it was removed, the lotio frigida to be used.

Dublin Medical Press, April 29, 1846, *p.* 263.

163.—*Observations on Syphilis, as contracted from Nursed Children.*—By John C. Egan, M.D., &c.—[Dr. Egan remarks that whilst it is generally believed that syphilis may be absorbed into the system of a parturient female, so as to affect the fœtus in utero, also there is no doubt that it may be transmitted to a child through the medium of a diseased nurse.]

The only symptom commonly present to point out the syphilitic taint in the new-born infant is a desquamation of the cuticle, a senile expression of countenance, and sometimes, though rarely, the occurrence of a few eruptive blotches; these appearances would, in themselves, however, be insufficient to satisfy us as to the true nature of the complaint; and, therefore, we are naturally led to inquire more particularly into the history of the case before we can form a correct or accurate diagnosis.

But when, on the other hand, the child is born apparently healthy, and continues so for a period varying from ten days to as many weeks, any doubts which we may have previously entertained are, in a great measure, if not altogether dispelled, by the supervention of a train of symptoms which, to the practised eye, are almost pathognomonic of the disease as it presents itself in the

infant. Nor is it essential that these characteristic marks should follow any particular order, or observe any certain fixed laws, either as regards priority of appearance or precise condition of the parts affected, or that a number should show themselves in the same subject, in order to decide us as to their syphilitic origin. The snuffling, for example, which is often an early attendant on the disease, is in itself a symptom of sufficient importance to direct our diagnosis, even where no other marks of infection are observable. "There is seldom," remarks Dr. Bird, "any real difficulty in the diagnosis of those cases, when once the practitioner has learned to recognise them. The characteristic snuffling will often enable him to recognise the existence of the disease, even before he has confirmed his opinion by visual examination. The puckered mouth, the position of the very characteristic eruption round the lips and anus, in addition to the peculiar varnished or fissured appearance of the parts from which the scales have faded, will, seldom, if ever, fail so convert a suspicion of the true nature of the disease, into positive certainty.

[Dr. Egan illustrates this subject with the following case, in which a nurse received the virus from a diseased child, and had all the symptoms as if it had been introduced into the system in the usual channel.

The patient was married, and the mother of three children. Her husband was a man of irreproachable character. She was admitted into hospital on the 1st of June, 1844. She became wet nurse to a child seven weeks old, apparently healthy; soon after, an eruption came out on the child's nates and thighs, which continued for some time, when the mouth became sore, and the mucous membrane peeled from the ribs. On examination of the patient, she was found to have an ulceration of the breast, with sloughing of the back of the pharynx. With respect to the child, Dr. Egan says:]

On examination, an ill-defined scaly-eruption is visible on the inner part of the thighs and arms of the child; a few spots are interspersed over its body; there are no condylomatous excrescences, or any other affection in the vicinity of the anus or vagina, and the mouth is now perfectly healed.

An ulcer, about the size of an ordinary plum-stone, of an irregular form, with uneven and slightly everted edges, situated immediately to the right of the nipple, is seated on the left breast of the nurse, which she states first presented itself a few days after the mouth of the child became affected, and commenced in the form of a fissure, which has been gradually increasing in size to the present time. It is unattended with pain, and none of the neighbouring glands have become enlarged. For the last week she has been complaining of sore throat, an erythematous blush pervades the back of the fauces, but no ulceration is apparent: there is an increased vascularity of the palpebral conjunctiva, with a vitiated secretion from the glands, but the structure of the eye is unim-

paired. Inoculated the arm with matter taken from the ulcer; ordered five grains of the iodide of potassium in decoction of sarsaparilla three times a day, the dilute nitrate of mercury ointment, to be applied to the palpebræ at bed time, and a lotion of subborate of soda with prepared chalk in equal parts of rectified spirits and water, to be kept to the parts affected. The child to take two grains of hydrargyrum cum creta three times in the twenty-four hours.

June 4th.—Nurse. Throat much improved; ulcer on breast has assumed a healthy appearance; complains of pain in the head and back; medicines repeated.

17th. Has lost all pain; throat well; inflammation has left the conjunctiva, and the lids have ceased to adhere; ulcer on breast decreasing in size; no effect produced by inoculation.

Child. The eruption fading, and its general appearance very much improved.

30th. The ulcer which occupied the breast of the nurse completely healed. No vestige of the eruption is visible on the child, which appears in perfect health.

July 5th. They were discharged.

Oct. 19th. Nurse re-admitted. States that she has not enjoyed good health since her discharge; shortly after leaving the hospital, copper-coloured spots appeared on the arms and thighs; has been recently taking pills, which have induced ptyalism. Her face is now covered with a pustular eruption, which is also very thickly scattered over the buttocks and upper part of the thighs; the orifice of the vagina presents a tuberculated condylomatous appearance.

On looking into the throat, a granulated condition of the back of the pharynx is observable, covered by a thin transparent coating of muco-purulent matter; experiences much pain and difficulty in deglutition; has lost all appetite for food; speaks in a low whisper, not, however, amounting to aphonia; complains of pains in the knees, oppression in the chest, and a sense of "great weight," as she expresses it, at the heart, accompanied with palpitations; perspires rather profusely at night, from which she finds considerable relief; chest morbidly clear on percussion: has become very much emaciated since she was last in hospital; pulse 120, small and weak; gums tender, with mercurial fœtor. Child died about six weeks ago, from a protracted diarrhœa.

Her throat was touched with the acid nitrate of mercury, and she was again put on the use of the hydriodate of potash, in combination with the compound decoction of sarsaparilla.

Under this plan of treatment, combined with nourishing diet, convalescence was slow but steady, the eruption desquamated, she gained flesh rapidly, and the throat was completely healed on the 24th of February, when she was discharged. She had another relapse of the sloughing sore throat for which she was treated in the hospital.

It is a fact worthy of notice, and to which out of many cases I have not met with a single exception, that a nurse may continue to suckle a diseased infant with perfect safety to herself, so long as no abrasion of the cuticle, or ulceration in or about the nipple occurs; but when such take place, she can no longer continue to do so with impunity. The same remark is made by Swediaur, who says: "In all cases of the kind that have come to my knowledge, either the nipples of the nurse were infected by syphilitic ulcers in the mouth of the child, or reciprocally the nipples of the nurse being attacked with ulcers, occasioned ulcers of the same kind in the mouth, nose, and lips of the child, and thus communicated to it a general infection.

[Dr. Egan concludes that mercury is a valuable auxiliary in the cure of syphilis; but that if used with the idea of its effecting a permanent cure, disappointment, he fears, will ensue.]

The preparation which I find most efficacious is the proto-iodide, pushed so far as to induce a mild degree of salivation. If, however, remedies are now laid aside, under the idea that a permanent cure has been effected, a few weeks will, in general bring a recurrence of the same form of disease, or perhaps other symptoms denoting a latent taint, will be superadded. I, therefore, find it advantageous, before the effects of the mercury have completely worn off, to follow up the treatment by the administration of iodide of potassium, which ensures the patient the best chance of recovery. Under any form of treatment, however, relapses will occasionally take place.

Dublin Quarterly Journal of Medical Science, May, 1846, *p.* 334.

164.—*On Stricture.*—By Dr. Leroy D'Etiolles.—[On the subject of catheterism Dr. Leroy D'Etiolles says:]

Surgical works treating of the anatomy of the urethra, rarely fail to state that all the obstacles to catheterism exist at the inferior wall of the urethra, where are united the dilatation of the bulb preceding the sudden contraction of the membranous portion, the projection of the verumontanum, the prostatic dilatation, and the projection of the neck; and the precept, now become trite, is delivered, that the point of the instrument should always follow the upper wall of the canal. * * * * * * The utility of observing this direction at the point of junction between the bulbous and membranous portions of the urethra cannot be doubted; for there is a difference of height of from four to six millimetres between the one and the other. If the point of the catheter were rested against the bottom of the depression, and force employed to overcome the resistance thus offered, a perforation would be inevitable, and the instrument would pass beneath the membranous portion. Its point must, therefore, be sufficiently raised to avoid the cavity of the bulb; but if, with this object, the upper wall of the urethra is pressed against too firmly, it often happens that the catheter strikes against the

sub-pubic ligament, and turns round in the hand of the operator when he attempts to depress the handle. It must not be forgotten that before reaching this ligament, which surrounds it like a collar, the urethra is abandoned by the corpora cavernosa which have separated, and that it is only strengthened anteriorly by the fibrous band which is inserted into the pubes; so that, anterior to the ligament, it possesses a certain laxity which allows it to engage the instrument, and arrest the course of the point, which, after having traversed the portion of the canal surrounded by the corpora cavernosa, passes into the depression formed between them and the sub-pubic ligament. Here false passages are less to be feared than posteriorly, because resisting fibrous sheaths and the pubes arrest the progress of the instrument, but the urethra may at all events become lacerated, and, in fact, often is so. How many times have I, when called to pass an instrument where catheterism had been unsuccessfully tried, been obliged, in order to avoid passing it again into these lacerations, to direct the point of the instrument away from the anterior wall so as to carry it backwards towards the bulb, sliding it afterwards from below upwards, so as to enter the narrow membranous portion. How many times also, finding the anterior wall of the urethra swollen from the contusion produced by the repeated pressure of the catheter against the ligament, have I been compelled to practice the *tour de maître*, and carry the instrument along the floor of the bulb, bringing it up afterwards behind the swollen part which impeded its entrance to the narrow portion. Thus, this precept must be understood in a qualified manner, and, above all, should not be exaggerated; otherwise it may give rise to difficulties which would have been avoided by being less impressed with its importance.

[Whatever irritates and inflames the urethra may be considered as a cause of stricture—thus gonorrhœa is a most frequent cause. It may also follow the use of strong injections, particularly those made of nitrate of silver. Injections, however, cannot be considered as a frequent cause of stricture, since they seldom pass to the membranous portion of the urethra, where nine-tenths of strictures are located. With respect to the seat of stricture, Dr. Leroy observes that]

1. Nineteen-twentieths of strictures exist at a depth varying from five to six inches, (M. Lallemand states it at from sixteen to twenty centimetres), *i. e.* immediately behind the bulb, at the commencement of the membranous portion, beneath the pubes, where the urethra is naturally narrower. 2. Next, in frequency are strictures of the posterior lip of the *fossa navicularis*. 3. Those of the meatus. 4. Strictures of the spongy portion, situated two or two and a half inches from the meatus, at the root of the penis, at the point where the canal is naturally somewhat narrow, and where, in a state of flaccidity, the penis is bent upon itself. 5. Various authors have met with stricture of the prostatic portion, and Lallemand has found it extending to the neck of the bladder.

[With respect to *treatment* he divides strictures into three classes. 1st. Those which allow both urine and bougie to pass. 2nd. Such as allow the urine, but not the finest bougie to traverse them; and 3rd. Such as present a complete obstacle to both. He says on the treatment by]

Dilatation.—This is performed in three different manners. The catheter may be left in the urethra, and changed but every three or four days—the slow or *permanent dilatation*: it may be changed every six or seven hours, which forms the continuous, sudden, or to use a favourite term in medical language, the *coup-sur coup dilatation*. Lastly, dilatation may be obtained by the retention of the bougie for a period varying from five minutes to one hour, gradually increasing their calibre in a progressive manner very important to observe, which is the *temporary* or *progressive* dilatation. Each of these methods is proper for certain strictures; but it is seldom that we can at once determine which mode is likely to best succeed. We must, therefore, commence with the most simple and the most convenient to the patient, and, in these points of view, *temporary* dilatation is to be preferred. It does not oblige the patient to abandon his business, or even his pleasures, during treatment, requiring only half an hour's repose daily. It is not painful, and often cures as radically and as promptly as the permanent dilatation.

M. Leroy prefers, for the generality of cases, to all others, the *gum-elastic bougies*, by reason of their simpleness, resistance, and polish, employing the capillary, spiral, conical, or curved one, according to the exigencies of the case.

[In speaking of temporary dilatation, he observes:]

An invariable rule in temporary dilatation is never to employ force in passing the bougie, introducing one at first which passes freely or enters with but slight effort; and never to increase the size of the bougie from day to day, *but at the same sitting, i. e.*, commencing with that which passed freely the day before. * * * * In the majority of cases the diameter of the bougie may be increased half a millimetre each *seance*, which makes about twenty days as the ordinary term of treatment. The following are the steps I usually pursue. In the two first *seances* one bougie only is introduced and left in a quarter of an hour; in the third, the bougie of the day before is first introduced, and then, after a quarter of an hour, one half a millimetre larger is employed, which in its turn is retained a quarter or half an hour: on the fourth, after the two first bougies have been passed, a third and larger is tried, and so on, increasing half a millimetre daily—taking care to commence with the bougies which entered easily the day before, causing each to be retained from five to ten minutes. Every second, or when the stricture is callous, every third day, the smallest of the series is discontinued, commencing with the second, then with the third, until the largest, of seven and a half or eight millimetres, passes through at once.

When four millimetres are reached, curved bougies pass with less violence than straight ones. * * * *
In the great majority of cases the painful sensation following the augmentation of the size of the bougie is relieved in ten or fifteen minutes, and the instrument grasped tightly at first then becomes free in the canal; so that if we did not allow it to remain in longer than five or ten minutes, as advised by some, and if we do not wait for the relaxation which follows the excitement produced by the introduction, we delay the treatment, for it is only after such relaxation the bougie can exert any mechanical effect. The *seances* usually last from thirty to forty minutes, during which two or even three bougies are introduced, and retained from ten to fifteen minutes each. There is infinitely less irritation produced by using two or three bougies at a sitting than by employing at each a larger one at first than had ever yet been tried. * * *
* * * This treatment by temporary dilatation, which continues from ten to thirty days, very often produces, notwithstanding this is denied, durable cures: and does so almost constantly when the stricture is fungiform, vascular, or produced by a thickened mucous membrane. I have had occasion to see patients whom I thus treated in 1826—8, that is more than fifteen years ago, and the stream of urine in these cases has continued the same size as immediately after treatment, *without a single bougie having been introduced since that time.*

[He then proceeds to treat of *rapid, or coup sur coup dilatation.*]

By this mode of treatment the catheter is increased in size every eight or ten hours, and the time occupied is but four or five days. This is the plan M. Lallemand now prefers, having abandoned his former predilection for the employment of caustic.

Prolonged dilatation, even yet so generally practised, was abandoned by M. Lallemand, in consequence of its injurious effects; but more lately, having observed that cauterization is not applicable to all cases and does not prevent relapse, he sought some new method, and, proceeding by progressive steps, he was induced to adopt the plan of *dilating* the stricture *rapidly*, having observed how easily we may pass from one sized instrument to another, and, above all, having proved that the cure is as durable as that produced by any other treatment; so that he was enabled to produce in two or three days results which formerly he could not have hoped for under as many months—preserving also all the advantages of dilatation without its inconveniences.

M. Leroy remarks that, when a regular increase of their size is observed, there is seldom any difficulty in passing the instruments, the first indeed being that which least easily enters. He employs the elastic gum catheter without the stilette, unless there is spasm of the urethra when this is required, in order that some resistance may be offered. He insists upon three rules being observed. 1. To wait before passing the second catheter until the irritation and swelling produced by the first subside, which they usually do in

twenty-four or thirty-six hours. If an increase of the size be attempted before this, success is prevented; while, if the passage of the second be delayed, the others may rapidly follow. 2. Suspend the treatment when it produces painful micturition, bloody urine, &c. These symptoms rarely appear before the fifth day, when the treatment is in fact concluded, and they disappear on the removal of the instrument. 3. After a bougie of seven and a half or eight millimetres has been passed and retained in the urethra for twenty-four hours, some days rest must be given the patient, and then, to assure the treatment, the three last numbers should be passed for half an hour during a week or so.

[*Permanent or slow dilatation.*—Dr. Leroy considers that there are few cases, even of hard strictures, that require this treatment.]

Cauterization. M. Lallemand, formerly one of the chief advocates for the use of caustic, after having rendered its application more simple, easy, and safe, has, nevertheless, renounced its employment in most cases. The first objection to cauterizing the interior of strictures, is the difficulty of limiting the action of the nitrate of silver to the portion of the canal where the obstacle is situated, so that the healthy parts anteriorly or posteriorly may not become affected by it. The next is the tendency to relapse after a longer or shorter period, and the necessity at last of having recourse to dilatation in patients who were regarded as cured by caustic. It does not follow that this method should be entirely rejected, for there are cases in which it cannot be replaced. Thus, when the interior of a stricture is excoriated or ulcerated, or the neighbouring mucous membrane is sensitive or inflamed, the presence of a catheter produces spasms and nervous symptoms which prevent the patient supporting it, and are renewed by any fresh attempts at its introduction. Here cauterization changes the vitality of the parts, leads to the cure of complications, and causes the disappearance of the excessive sensibility.

2. *Treatment of Strictures which allow the Urine but not Bougies to pass.*—In these cases there is not retention of urine, and they are to be treated by either the continuous pressure of a bougie or direct cauterization. M. Leroy observes, that the constant retention of an instrument in close contact with the strictured part is difficult, but when it can be accomplished, and he proposes an apparatus for the purpose, the stricture often becomes soft and tractable. Another plan, which does not require confinement in bed, is to press the end of the instrument against the obstacle for a quarter or half an hour daily. After each sitting, a small bougie should be attempted to be passed. This plan wants patience, for whole weeks may pass without any apparent progress being made. When a stricture cannot be passed, *direct cauterization* becomes also a proper mode of treatment, the retrogade being that which is to be put in force in cases where small instruments can be introduced The application of the nitrate of silver requires, however, the greatest nicety to avoid getting out of the tract of the urethra.

3. *Treatment of Strictures producing complete retention of Urine.*—Here unnecessary delay endangers life itself; yet, before resorting to more forcible measures, the various descriptions of bougies calculated to pass difficult strictures must be tried, in conjunction with the employment of bleeding, baths, &c. Dr. Leroy has derived no benefit from the application of belladonna in these cases, but he has known tobacco-smoke produce a favourable relaxation. If other means are unavailable, *Forced Catheterism* must be had recourse to, but the thrusting of large metal instruments through the obstacle, as recommended by Mayer, of Lausanne, is a very dangerous practice, tending, as it does, to produce lacerations. A small catheter is to be pressed rather than forced against the obstacle for the space of an hour. During the first quarter of an hour the pressure is sometimes more advantageously made by means of a conical catheter, substituting a cylindrical one when its point has commenced the penetration. M. Leroy recommends *incision* of the urethra posterior to the obstacle, only in case of a calculus being there detained, in which case he makes it through the rectum. During twenty years' practice he has had only *once* to puncture the bladder, and recommends that this should also be accomplished through the rectum.

External Incision of Strictures.—M. Leroy, we have seen, in cases of impassable stricture, occasionally opens the urethra posteriorly to the stricture; but M. Lallemand not unfrequently cuts down upon the strictured part itself. He does this when the obstacle to the passage of the urine is situated externally to the mucous membrane, and is constituted by tumours or indurations developed in the spongy tissue, or more superficially. Such nodosities may be found near any part of the canal, and dilatation of the urethra only temporarily repels them, while caustic applied to the urethra is of course hurtful. M. L. finds, by cutting completely through these obstacles, he induces their suppuration (which sometimes occurs naturally), and eventual removal. The canal itself must be penetrated, if this is necessary to secure a complete division of the nodosity.

M. Lallemand practises the same operation under other circumstances. Thus, in a very old case, the stricture was not excessively narrow, but the urine passed only guttatim, and the urethra was so irritable as to bear no instrument whatever to pass, an incision was practised with the best effect. In another case, the stricture consisted of an elastic ring, like caoutchouc, which always resumed its former contracted state the instant the catheter was withdrawn.

Medico-Chirurgical Review, Jan., 1846, *p.* 105.

165.—*Treatment of Gleet.*—By Dr. L. D'Etiolles.—[The evils resulting from the use of injections in the treatment of gleet, arise from their being too strong; hence, not only failing to act as astringents on the mucous follicles, they cause irritation, inflammation,

and even stricture of the canal; this applies more particularly to the nitrate of silver injections. Dr. Leroy remarks that:]

The discharge which strictures give rise to at first proceeds from the phlogosis of the mucous membrane situated posteriorly to them; but sooner or later the whole canal participates in this condition. In most cases this effect disappears after the cure of the stricture, however long it may have been present. Very frequently the urethro-prostatic discharges have been mistaken for spermatorrhœa. Nevertheless, the stagnation of the urine posterior to the stricture gives rise to phlegmasia and dilatation of the ejaculatory canals, whence may result a flux of seminal fluid. Numbers of substances, both of the vegetable and mineral kingdoms, have been employed to arrest these discharges. They operate not only as astringents of the mucous follicles, but also by coagulating the albumen which forms so large a portion of the fluids discharged from the urethra. It is important to observe that the sulphates of copper, of zinc, and of alum, which coagulate the albumen when used in moderate proportions, re-dissolve it when employed too strong, and thus may seem to keep up a discharge they first diminished. The nitrate of silver, in small doses, coagulates the albumen; in large ones, it combines with and cauterizes the tissues. Every one knows that nitrate of silver will often suppress these discharges, but it should also be known that, when used to this end, it sometimes induces inflammation and abscess of the prostate. Employed in the large proportions it so often is at present, it often lays the foundation for stricture. Where the nitrate is required, Dr. L. prefers making a slight application of it in substance; but frequently finds this unnecessary by employing the following ointment: kino ten parts, sulph. zinc. one part, lard twenty parts.

Medico-Chirurgical Review, Jan., 1846, *p.* 117.

166.—*Remarks on Syphilis.*—By Abraham Colles, M.D., &c., —*Modes of Administering Mercury.*—Dr. Colles believes *inunction* to be the best means of affecting the system. The quantity to be used at one rubbing should be divided into three or four portions and each well rubbed in before another is began with. The friction should be performed by another person, the patient not being usually competent to the requisite exertion. If the patient cannot remain within doors, mercury must then be exhibited internally, when, however, it is liable to act on the bowels. To prevent this, we must not be in too great a hurry to add opium, as frequently in two or three days the irritation will subside of its own accord, and not return unless the preparation given be changed, or the dose too much increased. Calomel affects the mouth more quickly than other preparations, but is more apt also to act on the bowels if it be not combined with opium. Corrosive sublimate causes the rapid disappearance of some of the secondary symptoms, but the cure effected by it is not radical unless it be followed by some of the

other preparations. Under favourable circumstances the mercury should manifest its effects in a week or ten days, and, although there are great differences in this respect, if no effect be produced at the end of a fortnight, the mercury should be stopped for a day or two, the patient purged, and a couple of warm-baths given him, when the mouth will frequently become sore, although the mercury has not been re-commenced. If the system resists the mercury we must not endeavour to produce the effect by increasing the quantity given, but examine the condition of the health, and thus, if we find fever existing, as indicated by a *dry* mouth, we must suspend the drug until this is relieved.

"There is nothing more important to remark than the condition of the gums under the use of mercury, and the degree of salivation produced. The gums may swell and ulcerate, and yet the mercury is disagreeing with the constitution, and doing no service to the disease. If the gums swell, remaining red, however, and a salivation comes on, all is right; but if it causes *ulceration* of the gums—if the gums are receding from the teeth, and that there is *no discharge of saliva*, mercury is doing no good, but mischief. If you continue to use it without this effect being produced, you must do one of two things—either double the dose of mercury, and by so doing, when you least expect it, throw your patient suddenly into a profuse salivation, which you will not perhaps be enabled to control; or you must retrace your steps, and alter the constitution by attending to the bowels, or doing whatever else seems indicated in the particular case, and when this is done, a proper salivation will often be the consequence, without another particle of medicine being given. * * * * Now, mercury, from peculiarities of constitution, cannot be made to affect the gums of all, and in some of these cases it will affect the throat instead. About the usual period it should be expected to show itself, the patient will experience some uneasy feeling in the throat, and, on your examining it, the soft palate will be found thickened and red, and an ash-coloured slough on one or both of the tonsils. This would spread rapidly if the mercury were rashly pushed without care and attention to the constitution. Although this is a local demonstration of the action of mercury, it is not one on which I should wish to place much reliance as a curative for the venereal disease; you must sometimes, however, be content with it, as no other can be had, and I must admit I have cured the primary disease without other local effect of mercury."

Dr. Colles does not advocate the production of anything beyond a moderate action on the mouth, which, however, is to be maintained until all induration has disappeared. The endeavour to force mercurialization upon systems which are little susceptible of its influence by means of very large doses, may give rise to a profuse salivation, without the consolation of forwarding the progress of the case. When we are aware of this peculiarity in a case, we should commence treating it by *small* doses. The chancre is sometimes healing under the mercury, when the treatment being im-

patiently urged on, the sore puts on a fungous or spreading character, when all mercury must be discontinued. When fever is developed during a mercurial course, too, the drug must be discontinued. If, after the mouth has began to be affected, the patient neglects himself, and allows the effect to subside, much more mercury will be necessary to reproduce it than was at first requisite to induce salivation.

Bubo.—It has been said that, if a chancre is healed up suddenly, a bubo will be caused; but, in truth, this results from the too sudden and violent effect of the mercury upon the constitution, and furnishes an additional reason for the cautious employment of the drug. In proof of this, when the chancre is not doing so well and a bubo is threatening to form, if the mercury be suspended for a day or two, and a purgative given, the sore will recover its healthy appearance, the bubo diminish, and the patient perhaps recover without requiring any additional mercury. But a case may present itself in which no mercury has been used, and in which chancre and bubo are both present, and for this, mercury is the proper remedy, which must be employed even though the bubo threatens to suppurate, and may seem at first to be the worse for it. When, however, a bubo continues to get worse under the use of mercury, and induces fever, the medicine must be suspended. It is of very little consequence whether a bubo, which has began to point, is allowed to burst or is opened by a lancet; but we must at all events never meddle with one that is hard and unripe. A bubo occurring in a person of weak, lax, habit. or in deranged health, and which remains indolent and flat, the skin over it being of a bluish or purple colour, requires to be opened by a large incision completely traversing this diseased skin. There is no advantage derivable from opening any description of bubo by means of caustic. When a bubo that has been opened forms painful fistulous canals towards the scrotum, mercury, which has been given in excess, must be suspended, the cavity of the ulcer stuffed with red precipitate, over which a pledget of tow is firmly bandaged, and measures taken which may contribute to the improvement of the general health. No benefit attends the division of these fistulæ.

Venereal Eruptions.—"You do not observe in syphilitic eruptions what is seen in other eruptions to which they have been thought somewhat analogous—namely, that the whole of the eruption tion comes out at once, that is, within a few hours. In the syphilitic, you may see it declining in one part and appearing in another at the same time; you very often have an opportunity of observing it in several stages of its progress at any time during the first month, until it all at last fades away, at no determinate period from its first appearance. Sometimes the eruption is extensively spread over the surface of the body, but at others it is confined to one region, or even to a spot you might cover with your hand. You might, perhaps, suppose that the more of the eruption that appeared the more mercury should be required for its removal—

but, I think, the very reverse is the case. I think, where the eruption comes out fully and fairly, it yields more quickly and completely than where you have only a few spots here and there. Some suppose there is great advantage gained by treating these eruptions *early* with mercury; but I am far from an unconditional acquiescence in this notion. I think you may begin to prescribe mercury too soon, and for this reason; the eruption is ushered in with fever, and among many individuals in this state, you will see every degree of severity in the symptoms of this fever, from the most trifling to the most intense; but whether mild or severe, your first duty is to remove the fever; for, if you give mercury during the eruptive fever, you will not do the eruption one bit of good, but will probably do the patient a mischief."

Mercury in large doses does much harm in these syphilitic eruptions; and Dr. Colles states, that they are cured with great rapidity by rubbing in from ten to twenty grains of *ung. hyd.*, or giving from three to five grains of pil. hyd. every night, either alone or with tonics, or mild diaphoretics. The scaly eruptions fade quickest under this treatment, then the papular, and the copper-coloured blotch. Rupia will, however, not tolerate the employment of mercury; and the pustular eruptions require it to be used in the most cautious manner. In cases where the mercury acts beneficially, it should be continued for at least six weeks, or the eruption will be re-produced, although in a more manageable form. When an eruption is situated in the face, the disfigurement may be most speedily removed by giving corrosive sublimate; but the treatment must be finished by friction or blue pill, or some other secondary symptom will follow.

Syphilis combined with Scrofula.—Dr. Colles has many interesting observations upon the modification which a scrofulous condition of the system impresses upon syphilis, and by no means agrees with those who prohibit the employment of mercury under such circumstances—having indeed seen some of the worst results spring from the non-mercurial treatment in these cases. He says,

"So far am I from being afraid of inducing salivation in those complicated cases, that I am on the contrary desirous to bring it on quickly,—much more so than I would be eager to do in a common case, and by the practice I have witnessed the most beneficial results. I am not at all disposed to deny that if mercury, when given in these cases, should not exhibit itself in the proper manner in the gums and salivary glands, but that it may and probably will exasperate the superinduced scrofulous affection, but from what I have endeavoured to impress upon you concerning the salutary action of this drug in any case where salivation may be necessary, you may readily understand that our present case is but another example of a general rule, and not an exception to that rule, as many seem to consider it. What I do then in instances where the glands of the neck become affected through the venereal stimulus is, when I do not see the mercurial ointment or blue-pill affect the

mouth quickly, I order calomel, with or without opium, to be added to the other form, and when the gums become touched, and some ptyalism produced, the secondary venereal symptoms rapidly recede, the swollen glands grow smaller, and if one of them has opened into an ulcer it takes on a healing disposition, and frequently cicatrizes by the time we judge enough of the medicine has been given to cure the venereal affection."

The preceding observations are applied especially to the case where the glandular affections are excited by the secondary venereal symptoms; but wherever the patient is under the full scrofulous action when he contracts the syphilis, there is no reason why full mercurial action should not be induced, and the syphilitic symptoms will yield as readily in this case as in a less complex one. So, too, even in patients threatened with phthisis, mercury must be cautiously given when they become the subjects of syphilis, provided that the case has not gone so far as to produce even slight hectic, when mercury will do harm.

Secondary Venereal Ulcers.—These, like primary ones, will sometimes heal before the constitution has been sufficiently impregnated with mercury, and if this be left off too soon, or irregularly administered, numerous and harassing relapses are sure to occur for months, or even years. Not only may the practitioner be deceived by the sore thus healing too speedily, but also by its seeming at first to get worse instead of better under the use of the drug. A feverish state of the system, or other causes of general disturbance may give rise to this, and yet, when the mercury is cautiously, but effectively continued, all is found to go on well. It requires, sometimes, great courage to persevere, in spite of apparent contradictions, but nothing is so mischievous in these cases as timid half-measures. It is not at the *beginning* of a mercurial course that we must stop the treatment on the first unfavourable appearance occurring, for this may arise from causes independent of the specific action of the medicine. If, however, after full action is established, a change for the worse occurs, it must be at once suspended.

[Modern practice proves iodide of potassium, in full doses, to answer best in the treatment of secondary eruptions. Primary symptoms of syphilis, however, should not be attempted to be removed without the use of mercury.]

Medico-Chirurgical Review, Jan., 1846, *p.* 231.

167.—*On Injections of Copaiba and Cubebs in Gonorrhœa*, &c.—By Thomas Cattell, M.D., Braunston.—[It is frequently the case that in treating gonorrhœa by copaiba and cubebs, gastric and nephritic irritation is produced, and their use is obliged to be discontinued. Dr. Cattell has succeeded in forming an aqueous impregnation of these substances which answer very well in the treatment of gonorrhœa, &c. He says:]

These processes pharmaceutically embrace the constitution of an aqua copaibæ and cubebæ. They are as follow:—

I. Distilled water of copaiba and cubebs.

℞ Ol. copaibæ, (or cubebs,) two ounces; water, five gallons and a half. Draw over from three to four gallons.

II. Extemporaneous water of copaiba and cubebs.

1. ℞ Ol. copaibæ, (or cubebs,) two ounces; magnesiæ carb., six drachms. Rub together, and add four gallons, or less of water. Filter.

2. ℞ Ol. Capaibæ, (or cubebs), as in the preceding; but use pulverised pumice-stone, sand, and Bath-brick, in the place of the magnesiæ carb.

III. Saccharised caustic solution of the oils of copaiba and cubebs.

℞ Ol. copaibæ, (or cubebs,) one drachm; caustic potash, (or soda,) half an ounce; white sugar, six drachms. Twenty-four ounces of water to be added gradually.

IV. Saponiform solution of the respective oils.

℞ Ol. copaibæ, (or cubebs,) two ounces; caustic solution of potash, (or soda,) one ounce. Rub together in a mortar, and add water as may be required.

As it is revelant to the present subject, it may not be amiss here to state, that I have applied the same chemical formula with but trifling variation, in producing an aqueous impregnation of the oils of turpentine, ergot of rye, creosote, &c. and used them in the treatment of uterine hemorrhage, and inaction of the uterus during parturition with the utmost success.

In one case of uterine hæmorrhage, occurring subsequently to delivery, I employed the aqueous solution of the oil of ergot three times during two hours, when the cessation of the sanguineous discharge clearly indicated the absence of any further danger.

In two or three cases of dormant action of the uterus during parturition, I employed the injection of ergot with immediate effect. I have, notwithstanding, proceeded in these cases with extreme caution, from the supposed influence of ergot in producing, when taken internally, fatal results to the fœtus in utero.

Lancet, Dec. 6, 1845, *p.* 611.

168.—*Injection of Copaiba in Gonorrhœa.*—[M. Ricord gives the case of a man who had contracted gonorrhœa, which was rendered peculiar from the circumstances of there being a fistulous opening from the urethra, about half way down the penis; the gonorrhœal discharge escaped from this opening, as well as from the orifice of the urethra. Under treatment with copaiba, that part of the urethra between the fistulous opening and the bladder became healthy, while the urethra anterior to the opening continued to secrete matter. The copaiba was continued, and the urine injected up the urethra from its orifice: he soon got quite well. M. Ricord remarks that]

This case shows very clearly the modus operandi of the balsam of copaiba in gonorrhœa to be, by impregnating the urine with its

principles, and being so applied to the inflamed membrane, and not by being in any other way determined to the part. This is further shown in similar affections in the female, where the urethra is more implicated than the vagina; it also points out the use of injections of copaiba in gonorrhœa; and, although they have been tried with partial success, it is by no means a general way of using the remedy. If, however, a formula could be found, in which it could be so combined and modified as when eliminated with the urine, all the advantages of the medicine might probably be secured. There is no doubt copaiba is the most powerful resource we possess in gonorrhœa, and where it does not succeed, it is generally from its nauseating the stomach to such an extent as to be inadmissible, or otherwise deranging the system; and, could it be used in an appropriate form as an injection, the patient might be spared the disgust and unpleasantness consequent on a course of this nauseous drug.—*London Medical Gazette*, Aug. 22, 1845.

Monthly Journal of Medical Science, Feb., 1846, *p.* 155.

169.—*Treatment of Chordee.*—[A case is recorded in the *Lancet* for December 20th, 1845, of a case of chordee, successfully treated by colchicum. The patient was a young man, twenty-one years of age, of sedentary habits, who contracted a gonorrhœa, which yielded in a few days to ordinary treatment. He had, however, painful erections at night, for which twenty-five minims of vin. sem. colchici were administered for four successive nights, when he was quite cured of this unpleasant affection. The same practitioner employed it in several other cases with the like success. This plan is not at all new, as Mr. O'Connor refers us to the fact of Sir B. Brodie, in his lectures during the session 1838-9, advised its use; and it is but due to the memory of the late Sir Henry Halford to state, that he recommended colchicum in "gout of the urethra." It has often been given in doses of even sixty minims and more with the most favourable result.]

Lancet, Dec. 20th and 27th, 1845, *p.* 687 & 710.

[The following prescription is recommended by Mr. Gillott in a communication in the *Lancet* for December 20th, 1845, for the cure of gonorrheal rheumatism: colchicum wine, two drachms; sulphate of magnesia, one drachm; carbonate of magnesia, one drachm; iodide of potass, half a drachm; water, five ounces and a half; one teaspoonful to be taken every fourth hour. Another correspondent of the *Lancet* recommends a combination of iodide of potass and decoct. sarsæ comp.]

170.—*Incontinence of Urine consequent to Stricture.*—By W. Lawrence, Esq., F.R.S., &c.—[Mr. Lawrence mentions a case that was under treatment a few years in St. Bartholomew's Hospital for *incontinence* of urine, the result of *stricture* of the urethra; in its treatment the lancetted stilette was used—the patient was about

fifty years of age, the abdomen enormously enlarged, quite as much as that of a female in the last month of pregnancy. Mr. Lawrence observes,]

There was a firm unyielding stricture behind the bulb, through which no instrument had passed for several years. After repeated ineffectual trials of various instruments I determined to employ that of Mr. Stafford. On the first occasion, after protruding the lancet to its full extent, the instrument passed on half an inch, and there was but little bleeding. Two days after the instrument was again employed, and the lancet freely protruded; it now passed on through the contracted portion. I withdrew it, and introducing into the bladder with ease a catheter (No. 9), drew off between 70 and 80 ounces of urine. It was necessary to use the catheter daily; the bladder gradually regained its contractile power, and the patient left the hospital at the end of three or four weeks, considering himself well. As we saw nothing more of him, the relief was probably permanent.

[He describes another case in which Mr. Stafford's instrument was used. On his admission, the abdomen was very much enlarged, there was constant micturition with pain in the bladder and loins.]

Various instruments were tried, but none could be carried through the stricture, which was situated behind the bulb; I therefore introduced the lancetted stillette, and pressing it strongly against the stricture, entered the urethra to the length of seven inches, when profuse bleeding ensued, and I withdrew it. The bleeding ceased in a short time on the application of cold. Castor oil was administered, and, after a free evacuation of the bowels on the following morning, a large quantity of urine was passed, the distended bladder being much reduced in size, but not entirely emptied. The bladder became distended as before, and the incontinence continued. A week after the use of Mr. Stafford's instrument, a small catheter (No. 3) being introduced into the bladder, 40 ounces of clear urine were drawn off. The catheter was now daily introduced, and the size gradually increased, the quantity of urine drawn off slowly diminished; and the patient was occasionally able to make water in a small stream.

[In two months after the operation, and by means of repeated introductions of the catheter he was discharged—he could pass the urine in a good stream and retain it with ease. Mr. Lawrence makes the following observations on this important subject:]

Incontinence of urine, various in kind and degree, is not an unfrequent accompaniment of stricture, although the primary and obvious effect of the disease is to obstruct the flow of water. Inflammation of the mucous membrane of the bladder, caused by stricture, may render the organ so irritable that it will not bear distention. The desire to make water recurs frequently, and so urgently, that if it is not gratified the fluid escapes involuntarily.

In a case of bad stricture, powerful exertions, both of the bladder

and the respiratory muscles, are required to empty the bladder. When these efforts cease, the urethra remains full of water behind the stricture, where it is probably dilated, and the patient is in commoded by the gradual escape of this portion of urine after he supposes that he has done making water.

A more serious kind of incontinence occurs when the bladder empties itself imperfectly, and thus becomes distended to a greater or less degree. We have here the apparently opposite conditions of retention, at least partial, and incontinence. When the bladder is moderately distended, the muscular coat gradually increases in thickness, and the expulsive effort is more powerful. The neck of the bladder, which in the normal state is closed so as to limit the collection of water in front, gives way to the powerful exertion of the hypertrophied muscular coat, and remains permanently open, so that the urethra is constantly full behind the stricture. If, under the serious impediment of a bad stricture, the bladder should become enlarged to the capacity which it attained in the two cases now related, it becomes incapable of contraction. The mere distension, however, produces the same effect as the powerful action of the muscular coat does in the other instance, that of keeping the neck open, and the urethra filled with water behind the stricture. In this state of things the action of the respiratory muscles, in the usual motions of the body, or their regular contractions in normal respiration, and still more any irregular or more considerable exertion in either of these ways, will force out the urine through the stricture.

It must be very obvious that the great annoyance of incontinence of urine, under these circumstances, can only be remedied by relieving or curing the stricture, and thus preventing the accumulation of the fluid in the bladder. When this object cannot be accomplished by the safer means of bougies or catheters, the lancetted stilette may sometimes be resorted to with advantage. It is a dangerous instrument, and must be used with great caution; but it will sometimes afford more speedy and effectual relief than can be attained in any other way.

[In a case of retention of urine, which lately occurred in our own practice, we succeeded admirably in restoring the tone of the bladder by doses of secale cornutum. The patient, Mr. John Smith, of Wortley, æt. sixty-nine, after a long walk, found himself unable to empty his bladder, and applied to a neighbouring empiric who suffered the urine to collect for two days without being aware of the case. The consequence was that the bladder could not be emptied, and the catheter was introduced two or three times a day for a considerable period. We at last gave two scruples of ergot of rye well infused in hot water twice a-day, an hour or two before the time when the urine usually had collected so as to distend the viscus. In a very few days this took effect, and the bladder, at the date of this note, has nearly recovered its tone.]

Medical Gazette, Dec. 5, 1845, p. 1357.

DISEASES OF THE SKIN.

171.—ON SOME LOCAL FORMS OF CHRONIC ECZEMA.

By J. Erichsen, Esq., F.R.S., &c.

[Chronic eczema assumes different forms as it attacks different parts of the body, as the scalp, face, ears, tongue, anus, &c. Chronic eczema of the face usually is of an impetiginous character; it is generally met with in children, rarely in adults, and when it does occur in the latter, it is in consequence of extension from the scalp.

Chronic Eczema of the Face.—Mr. Erichsen mentions the case of a ladies' maid, who caught cold whilst travelling outside the carriage, her face became stiff and inflamed, and pimples with watery heads came out on the forehead and cheeks. The disease continued for three months, without interruption, in spite of treatment, when she was admitted, January 27th, under Mr. Erichsen's care, into the Westminster Hospital. On her admission,]

The skin of the greater part of the forehead, and of the upper part of one cheek, now presents a dry and glazed appearance, and and is of a vivid red colour; it is covered by a number of thin curling furfuraceous scales, of a whitish or greyish colour, is slightly chapped in the direction of the natural wrinkles of the skin, and is occasionally bedewed with a watery exhalation. Vesicles no longer form, as in the first instance, on the parts on which the disease is most active, but they occasionally make their appearance about the circumference of the patch, where they present the true eczematous character. The affected parts feel very tense, smart, and tingle much, more especially after exertion, during cold weather, or if exposed to sudden changes of temperature.

As it was of considerable importance to the patient to be cured as speedily as possible, as she had already been subjected to much treatment without deriving any benefit, and as there was no circumstance to contraindicate it, it was determined to have recourse to arsenic. I accordingly commenced by ordering three drops of the liquor arsenicalis three times a day, and directed that the affected part should be preserved day and night from the action of the atmosphere, by covering them up with lint spread well with *zinc ointment.*

Feb. 13.—Much better. The skin is softer, not so glazed, and the feeling of tension is less. The liquor arsenicalis was now increased to four minims for a dose, and the Unguent. Hydrarg. Precipitat. Albi was substituted for the zinc ointment, it being thought that a slight stimulant might be of service.

[In consequence of febrile symptoms arising, the arsenic was omitted for six days, when it was again resumed, and on the 25th of March, the disease was perfectly cured. Mr. E. mentions

another case, a gentleman, thirty-four years of age, who had laboured under eczematous eruption of the face from childhood.]

The cheeks, lips, and skin were, when I saw him, covered with thin, peeling, furfuraceous scales, of a whitish-grey colour; but, occasionally, under the influence of any cause of irritation, they *become the seat of a watery exudation*, which, on drying, formed thicker and more laminated incrustations, adding greatly to the distress and discomfort. He likewise suffers occasionally from an attack of eczema about the extremities, especially on the fore-arms.

The patient was ordered to apply the Unguent, Hydrarg. Precipitat. Albi to the affected parts every night, to take five grains of Plummer's pill every second night, effervescing saline draughts twice a day, in order to allay the irritability of the stomach, and as soon as this was accomplished, was put on a course of the Harrogate waters.

[This case quite recovered. When the disease depends on irritation of the skin and mucous surfaces, it can be soonest relieved by carefully regulating the diet, avoiding all stimuli, and using one of the most efficient remedies that we possess in affections of this class,—*the Harrogate waters.* Where the temperament of the patient is irritable, arsenic, cantharides, &c., would decidedly aggravate the disease. *Chronic eczema of the ears*, which usually proceeds by extension from the scalp, is a very painful as well as obstinate affection. Mr. Erichsen observes that,]

The ears, when attacked by eczema, become exceedingly red, tense, hot, and shining; a number of small vesicles then appear, which contain a clear transparent serum, of a reddish or pale yellow colour; when these give way, the fluid that is effused forms thin scabs or scales, which are usually cracked in all directions, and which are frequently curled up or project from the surface of the skin. If the disease continue, the pinna attains a very large size, becoming hypertrophied, and often fissured; sometimes, indeed, the swelling goes on to such an extent as to block up the external meatus, giving rise to temporary deafness.

[When it occurs in young children, it can easily be cured; it is generally in females from fifteen to twenty-five, or in women about the change of life, where it proves so obstinate. It is generally associated with irregular menstruation, as may be noticed from the fact, that it is aggravated at those periods when the uterus ought to act. Mr. E. describes a case which came under his care, a female, twenty-one years of age; menstruation was irregular.]

Both ears were found, on examination, to be affected nearly to an equal degree. They were red, glazed, much swollen, and chapped, covered with thin, flimsy, scaly incrustations, from under which a serous fluid occasionally oozes, and are very hot and tense. The integuments of the mastoid, temporal and parotidean regions are likewise involved, being inflamed and covered with thin furfuraceous laminæ.

She was ordered to apply bread and water poultices to the ears every night, to cover them up in rags spread with *zinc ointment* during the day; to take ten grains of the pil. aloes c. myrrha every second night at bed-time, to abstain from all stimulants, and to adhere as strictly as possible to a milk diet. The ordinary means, such as mustard and water to the feet, &c., were likewise directed to be adopted for re-establishing the menstrual function, and were attended with success in the course of a week.

At the end of a fortnight she was much better, the ears were less tense, and not so red or swollen. She was now ordered to apply an ointment composed of equal parts of the ceratum plumbi comp. and zinc ointment, and to take five minims of tincture of cantharides, and thirty of liquor potassæ twice a day. This plan of treatment was continued until the end of April, when she was perfectly cured, the ears presenting their normal appearance, and having lost entirely their hypertrophied condition.

The treatment of chronic eczema of the ears occurring in the adult is to be conducted on the same principles that guide us in the treatment of this disease occurring in other parts of the body. Any irritation that may exist must be subdued by means of poultices and fomentations; if necessary, a few leeches might be applied. The zinc ointment, or the unguent. or ceratum plumbi comp. or the ceratum cretæ comp., diluted with the elder-flower ointment, will be found the most eligible applications when a very mild astringent is required.

The general treatment must be conducted in reference to the condition of the system. If there be any disorder of the digestive organs, or uterus, that must first of all be remedied. If none exist, or after its removal, it will be necessary to have recourse to those means that are generally found to succeed in cases of chronic eczema, such as the dilute nitric, or nitro-muriatic acids, the tincture of cantharides (especially when there is amenorrhœa), either alone or in combination with the liquor potassæ, or the arsenical solution.

Owing to the very rebellious nature of the form of eczema now under consideration, it will often be necessary to have recourse to the last-named remedy, which will, if properly administered, and with those precautions that I formerly pointed out, most generally succeed. I have at present under my care a case of chronic eczema of the ears of the kind just described, which, after resisting all other remedies, is rapidly yielding to the administration of Fowler's solution. Many writers recommend the employment of lint to keep the meatus auditorius externus open; this I do not think is ever necessary, any obstruction that may have been occasioned by the swelling of these parts subsiding as the disease is cured, and no chance of permanent occlusion ever existing.

Medical Gazette, Jan. 2, 1846, *p.* 14.

Eczema of the Scrotum, Penis, and Anus. — Eczema of the scrotum and of the inside of the thighs of young children is of a more active character, and is by no means so troublesome as that which occurs in more advanced life. In many cases it appears to be owing to the urine being allowed to dribble over the thin and delicate skin of these parts.

The appearance presented by chronic eczema of these parts in children is very remarkable. The scrotum and integuments covering the pubes, the inside of the thighs and penis, are of a vivid red colour, inflamed and oozing; occasionally covered with soft, moist, greyish, or yellowish scabs, from under and between which a serous fluid exudes in tolerable abundance. At other times they are dry, glazed, and chapped in all directions, being merely covered here and there with thin flimsy scales. These two conditions, the moist and the dry, alternate with one another, being evidences of the greater or less activity of the disease. The parts affected are sometimes bounded by a very abrupt line, and there is always a degree of intertrigo and excoriation from friction between the fold of the thigh and the scrotum. There is also much itching, and considerable distress is occasioned by the occasional dribbling of a few drops of urine down the inflamed surface, when the child makes water. The gait of a child afflicted with this disease is usually "straddling," the legs being kept asunder, and there is much pain and inconvenience in walking.

Exacerbations of the disease taking place from time to time. the vesicular element becomes manifest in the neighbourhood of the affected parts.

When eczema of the scrotum occurs in more advanced life, especially in old men, amongst whom it is by no means uncommon, it is peculiarly obstinate and annoying; the more so as it is not unfrequently accompanied by a pruriginous affection, which very frequently extends to the anus.

When occurring in individuals past the middle period of life, eczema attacking the scrotum usually presents the ordinary characters of that disease in its chronic furfuraceous or squamous condition. The scrotum is much wrinkled, red, dry, rough, and glazed, or covered with thin, peeling, curled, laminated, and dry furfuraceous incrustations of a whitish or greyish colour, which rub off in considerable abundance, exposing cracks and fissures, from which a thin, ichorous, or bloody disharge, oozes. The itching, which is intolerable, and is more complained of than anything else, is much aggravated by any excess in diet, or when the patient is warm in bed. Every now and then, under the influence of some exciting cause, the disease assumes a more active condition, revealing its vesicular elementary character, and thus enabling it to be readily distinguished from prurigo of the region affected.

Eczema involving the anus is always a most troublesome affection. It may be either an extension of the disease from the scrotum and perineum, or it may be confined exclusively to the anus and lower part of the rectum. It is occasionally seen in young

children accompanied by intertrigo, or in consequence of the extension of the disease from the neighbouring parts, when occurring in adults. It is characterised by occasional vesicular eruption, excoriation, fissures, and chaps, which bleed, and are excessively painful on the passage of the fæces, more particularly if these be hard or lumpy. There is always excessive pruritus; more especially, when the patient is warm in bed, or after standing for any length of time.

Eczema of the anus is more commonly a disease of individuals who have passed the middle period of life, and is not uncommonly connected with piles.

[This affection occasionally occurs in young subjects, and Mr. Erichson mentions a case of a boy, a delicate fair child, four years of age, whom he attended for this disease. He ordered lint, wet with lead lotion, and covered with oil silk to be applied, in order to keep off the external air, and also to prevent the urine running upon the parts.]

A few grains of hydrarg. cum cretâ were given every second night, and an occasional dose of castor oil in the morning. This plan was continued until the 11th, when the parts looked much quieter and better. Zinc ointment was then substituted for the lead lotion, and five drops of liquor potassæ, with as many grains of calomel and magnesia in water, directed to be taken twice a-day. On the 24th he was perfectly cured.

[Mr. E. also alludes to a case of chronic eczema of the scrotum of two years standing, occurring in an adult fifty-nine years of age.]

The part affected was dry, red, rugose, traversed in several directions by fissures and chaps, from which a serous fluid exudes at times, and is covered with thin greyish incrustations, some of which are of a considerable size. There is much itching, and occasionally an acute attack of eczema comes on, the part becoming inflamed and oozing.

The patient was ordered to keep a very strict diet, to abstain from all fermented liquors, salted and heating articles of food, and to take 20 minims of the liquor arsenici et hydrag. iodidi twice a day, with five grains of Plummer's pills at bed-time, and to apply a mixture of zinc ointment and the unguent. plumbi acetatis constantly to the parts by means of a piece of lint cut to the proper shape. This plan was continued to the end of May, the quantity of Donovan's solution having been increased to 30 minims per dose. The affection of the scrotum was very much better, the irritation had been subdued, no fresh attack of the disease had come on, and the skin was less rugose, did not desquamate, was softer, and altogether much improved. The patient continued the arsenical until the middle of June, when he was perfectly well. A few weeks afterwards the disease returned, but was soon cured by the same means.

The most useful local applications in cases of eczema of the scrotum are, after any active inflammatory action that may be present has been subdued by poultices, fomentations, or, if necessary, leeches, the application of lint dipped in warm lead lotion, and covered with oiled silk, or the unguent. zinci, either alone, or mixed with the cerat. plumbi comp., or ceratum plumbi acetatis, or the unguent. plumb. comp. In cases of eczema about the anus I have found the addition of the extract of belladonna to one or the other of those ointments, but more especially to the unguent. plumbi acetatis, a very efficient means of allaying the irritation. The general treatment must be conducted on the principles that generally guide us in the treatment of the more obstinate varieties of eczema. Most dependence is to be placed on the nitric acid diluted, or on the liquor potassæ arsenitis, or Donovan's solution, given carefully. Every means will, however, fail, unless strict attention be paid to diet and general hygienic measures.

[*Eczema of the scalp*, however, appears to be the most commonly met with; for of all cutaneous diseases seated in this locality, as many as forty-three per cent. are cases of *eczema*. It is exceedingly difficult to remove; it occurs mostly in children, very rarely in adults. Mr. E. observes that,]

Chronic eczema of the scalp, although presenting considerable variety in its characters, seems to resolve itself naturally into the three following species:—

1. *Simple chronic eczema*, which may assume either a moist or a dry form.

2. *Eczema furfuracea*, corresponding to the porrigo furfurosa of Willan

3. *Eczema amiantacea*, which is an extreme condition of the last variety.

Simple chronic eczema of the scalp may, as has just been stated, assume a either a moist or a dry form.

In the moist variety of the disease there is always a very copious discharge of a thin serous fluid from a number of small openings, the remains of former vesicles, that lie closely scattered on the inflamed and tender surface of the scalp; this discharge which is of an acrid and irritating nature, is apt to increase the inflammation in that part of the skin over which it flows. If it be very abundant the hair looks as if it had been soaked in a thin solution of gum arabic, being melted together in locks, which have a dirty yellowish grey moist appearance, and between and under which the inflamed scalp may be seen pouring forth the discharge. As this lessens in quantity, soft yellowish-grey scabs will be formed, which gradually losing their moist appearance will be found to resemble those that characterise the dry variety of the disease. In the midst of this, acute attacks of eczema, attended by a great evolution of vesicles, by increased heat and redness of the scalp, frequently occur, adding

very greatly to the severity and obstinacy of the disease; and the distress of the patient is very often greatly increased by a chronic inflammation of the eyes and ears, which is a common complication of this form of eczema. As the discharge lessens, and the inflammatory action subsides, the moist passes, in many cases, into the dry variety of chronic eczema.

The extent to which the scalp is affected in the dry form of chronic eczema varies considerably; there may merely be a few scabs in a few scattered situations, or the whole head may be thickly coated with them.

This variety of the disease is characterised by whitish, yellowish, greyish, or yellowish green scabs or scales, usually of a very irregular figure and degree of thickness, separated from one another by cracks and fissures which allow the dry red inflamed scalp to be seen. These incrustations are always more or less lamellated, and are usually thinner at the circumference than in the centre, which is the part last separated from the scalp. They are loosened from the skin by being gradually pushed up by the growth of the hairs that traverse and are entangled by them; the part that is farthest from the vertex being the first raised up; the sides are then separated, and when the upper and middle parts are detached the scab falling off, leaving the subjacent skin dryt glazed, and of a dull red colour. These scabs are most numerous about the vertex, the sides of the head, and the ears. The hair is frequently not at all affected in this disease, and never permanently so, although it may become dry, thin, and brittle; but as it returns to its original strength and appearance as soon as the disease is cured, no permanent baldness ever results.

It is only in particular instances that the two varieties of form in which simple chronic eczema of the scalp occurs, are separated by characters as well and as clearly defined as those above mentioned; in general they run insensibly into one another, varying as any cause may occur to increase or diminish the inflammatory action going on in the scalp, The moist, indeed, has a tendency in all cases, in its progress towards a cure, to pass into the dry form of the disease, and this again into the species that will immediately be described—eczema furfuracea. We must, therefore, in nature expect to find the appearances above described as characterising the two varieties of simple chronic eczema, combined as it were in various proportions which cannot well be described, but the exact characters of which may readily be learnt by observation of the disease itself.

The next variety of chronic eczema of the scalp, eczema furfuracea, is of very common occurrence, and is characterised by a number of thin scales, which vary very considerably in size, and are either moist, adhering to the hairs, or dry and loose. When slight, and of but trivial extent, this disease appears in the form of a few thin laminated scales of a whitish or greyish colour, which are the remains of vesicles that have either shrunk without effusing their contents, or else have contained such a minute quantity of

serum, that when it has dried up it has been insufficient to form a scab.

The more severe forms of the disease are usually preceeded by an acute attack of eczema of the scalp, which after passing into a chronic condition gradually assumes the appearances characteristic of the furfuraceous variety. In this state the epidermis appears to separate itself into detached scabs, which are often loosened in considerable abundance in consequence of the patient rubbing himself. Occasionally a few vesicles arise, from which a serous fluid exudes, forming the scales into masses, and agglutinating them and the hairs together. These masses of scales and hair give a soft yielding sensation to the finger when pressed upon, and if they be removed we shall find the subjacent cutis to be red and inflamed.

These scales vary in colour from nearly a pure white to an ash or yellowish-grey, which occasionally passes into a yellowish-brown, and rarely into brown, presenting when of this latter hue a close resemblance to bran. This disease may be confined to patches on the scalp, or it may extend over the whole of the head. The hairs are never lost, but occasionally become thinner and lighter in colour.

When this affection is on the decline the discharge dries up, the scales fall off, separating in large quantities when the patient shakes or scratches his head, so that it is impossible for him to keep his clothes free from them, the pruritus ceases, and the scalp gradually assumes its natural appearance.

The third variety of chronic eczema of the scalp, *E Amiantacea*, is by no means a common affection. When it does occur it is most frequently as a consequence of the preceding one.

Ibid, Jan. 9, 1846, *p.* 65.

[The general treatment of *chronic eczema of the scalp* will vary according to the age and constitution of the individual, and also according to the immediate exciting cause of the disease. In the local treatment, the same difficulties do not present themselves; this must be regulated by the actual state and duration of the disease.]

In the first case, where the disease appears in an otherwise healthy child, about the period of dentition, not only giving rise to no constitutional disturbance, but, on the contrary, having a tendency to prevent the occurrence of mischief that is so apt to happen at that time, we must be especially careful not to do anything that can suddenly check the eruption; and we must resist all solicitations, dictated by the vanity of parents, to effect a rapid cure. In these cases we should content ourselves with cutting the hair short, applying bread and water poultices, so as to remove incrustations, and allaying undue irritation by means of the application of rags dipped in olive oil, or smeared with zinc ointment; or, as Cazenave and Schedel recommend, direct the nurse to sprinkle some of her own milk upon the affected part. The bowels should

at the same time be open by means of small doses of hydrarg. c. creta and castor oil, and the gums be well lanced if there be any irritation in that quarter. Antacids, of which the fluid magnesia is one of the best, will likewise be found very serviceable. These cases need give the practitioner no uneasiness; the disease, as soon as its purpose has been served in the economy, gradually subsides, and usually disappears without much trouble. Should it lapse into a very chronic condition, assuming the furfuraceous character, it may most generally be readily cured by means of those applications that I shall immediately mention.

[In the treatment of this disease in children, they must be weaned as soon as possible on beef tea, broth, or other nutritious diet; mild tonics should also be given, as a few drops of the tincture of ammonio-chloride of iron, or the iodide of iron, twice a-day; the latter should be given in from half-grain to two grain doses. After the age of puberty, the disease is generally met with in females, accompanied with irregular performance of the menstrual function; this must be regulated by the pil. aloes c. myrrha, the warm hip-bath, leeches to the groin, cupping over the sacrum, &c. In more advanced life it is attended with some derangement in the stomach, intestines, or liver: blue-pill, Plummer's pill, or other mild alteratives should be given; all stimulants should be avoided, and occasionally fixed alkalies, as the liq. potassæ should be given. If these means fail, diluted nitric or sulphuric acid should be tried, and in obstinate cases tincture of cantharides, liq. arsenicalis, or Donovan's solution, will be serviceable; at the same time, the local treatment is not to be neglected. On this Mr. Erichsen remarks,]

In the early stages, when the disease presents the character of simple chronic eczema, cleanliness and mild antiphlogistic means are alone necessary. The head should not be shaved, on account of the irritation thereby induced, but the hair must be removed by being cut off as close to the scalp as possible by means of a pair of curved scissors, so as to prevent the discharge from accumulating in and beneath it, and thus becoming an additional source of irritation to an already inflamed part. Warm poppy-head, quince-seed, or marsh-mallow fomentations, applied by means of a large soft sponge, or emollient bread and water poultices, must then be employed, for the double purpose of allaying irritation and removing scabs, so as to prepare the surface for the employment of other means. After the surface has been well cleared by these means the irritation will often be best allayed by the application of zinc or lead ointment, of linen rags soaked in olive oil, or of lint dipped in tepid lead lotion, and covered with oiled silk. The great point is to prevent the access of air, which always, especially in young children, increases very considerably any existing irritation.

When the disease has assumed a more chronic and inactive condition, passing into the eczema furfuracea, it will be necessary to have recourse to gentle stimulants. For this purpose a lotion,

composed of from one to two drachms of the sulphuret of potass, either alone or combined with an equal quantity of the carbonate of the same alkali, in a pint of plain, or of lime water, will be found one of the most useful applications, and one that has seldom disappointed me. The head should be well washed three or four times a-day with this lotion, diluted, if necessary, to such an extent, as merely to produce a gently stimulating action. At the same time, an ointment, composed of from a scruple to half a drachm of carbonate of potass to the ounce of lard, or one of creasote in the same proportion, or that of the white precipitate, should be applied every night after the last application of the lotion. It should be washed off in the morning, and then re-applied, and in the course of six or eight hours washed off again; thus alternately applying and washing off the ointment at stated intervals during the four-and-twenty hours: this alternation of stimulus will be found very useful, and productive of more benefit than the continuance of any one application.

If a somewhat stronger stimulus be required, the affected part having fallen into an inactive condition, the unguent. hydrarg. nitrat. diluted with spermaceti ointment, as recommended by Dr. A. T. Thomson and Rayer, the common sulphur ointment, as employed by Mr. Phillips, or a mixture of equal parts of this and tar or creasote ointment, will be found most useful. The latter application in particular, in combination with the sulphurous lotion already recommended, has proved of most service in my hands.

I have already on a former occasion expressed my opinion of the oiled-silk cap, which is so commonly worn in cases of eczema of the scalp, and which, in my opinion, is a most injurious covering to the head; for by confining the perspiration it keeps the scalp in a constant vapour bath, by which means the skin is soddened, and that state of passive congestion, which it is our object to get rid of, increased. A thin linen cap, which should be changed as often as it is soiled, is by far the best and cleanest covering to the head.

In conclusion, it cannot be impressed too strongly, that during the earlier stages of all eczematous affections of the scalp, the only mode of treatment, whether local or general, that is likely to benefit the patient, is one conducted upon mild antiphlogistic principles; and that it is only when the affection has acquired a chronic inactive character, and more particularly when it has assumed the furfuraceous condition, that local stimulation, even of the mildest kind, can be borne, or that those internal remedies, which are generally looked upon as exercising something of a specific influence on this disease, will act otherwise than injuriously.

Ibid, Jan. 16, 1846, *p.* 107.

Chronic Eczema of the Hands.—[This generally arises from the direct application of irritating substances to the parts, as lime in bricklayers, sugar in grocers, potass or soda in washerwomen, mordants in dyers, or minute particles of steel in smiths, wheelwrights, &c.]

The characters that this disease presents when attacking the hands are those assumed by chronic eczema in its worst and most inveterate forms. There is, in the first instance, an eruption of vesicles, which are most generally small and pointed, projecting but slightly above the level of the skin, and which are at first confined to a small spot, usually on one of the knuckles, or on the back of one of the fingers, whence the disease gradually creeps on until the greater portion of the back of the hand may be involved. In some rare cases, however, these vesicles are large and prominent.

[The diagnosis is of importance, particularly if there has been no local irritant, as it leads to suspicion, more especially in the better class of society; it may be confounded with scabies and psoriasis.]

From scabies the diagnosis is not always easy, though in the majority of cases it is not attended with any difficulty. In eczema the vesicles are usually small, agglomerated, and collected in clusters on the back of one or two knuckles, or in patches about the dorsal aspect of the hand; and occasionally we see a raw excoriated oozing surface, which is never met with in scabies. In scabies, on the contrary, the vesicles are generally large, more distinct, not clustered; and situated chiefly between the fingers at their roots, and not on the knuckles or back of the hand. In scabies, also, there is a peculiar pruritus, giving rise to an irresistible propensity in the patient to scratch himself. In eczema this is not the case, and the morbid sensation is of a smarting or burning character. When, however, as is occasionally the case, the vesicles of eczema are larger and more distinct than usual, the diagnosis is not so easy, and must depend rather upon the history of the case, upon the patient's sensations, and the situation of the vesicles, than on their individual characters.

[The vesicular character of the disease is a sufficient guide in diagnosis, and when it becomes chronic, and assumes a furfuraceous appearance, it is of little practical importance, as the treatment is directed by the condition of the part, and the causes of the disease. The treatment is the same as when occurring in other parts, only the hand must be kept perfectly at rest; therefore all those occupations or exercises which may have caused the disease, must be at once given up. Mr. Erichsen observes:]

The topical applications that I have found of most service in cases of chronic eczema of the hands, have been, in the earlier stages, or during any temporary exacerbation of the disease, the water dressing, applied by means of oiled silk gloves, or finger-stalls; and, at a more advanced period, when the disease has assumed an inactive character, a solution of nitrate of silver, in the proportion of one grain to the ounce, kept constantly applied in the same way as the water dressing.

I have lately attended with Dr. Barlow, of Upper Gloucester Place, a lady, who had suffered for some months from chronic eczema of the hands, and who has been completely cured by the

continued application of this lotion in conjunction with the constitutional treatment that will immediately be mentioned. A solution of the carbonate of soda, in the proportion of from two to four grains to the ounce, will likewise, in many cases, be found of service, especially in allaying the irritation which is so troublesome. For the same purposes the following lotion: ℞. Acidi hydrocyan. dil. ʒss.; zinc oxydi, ʒj.; aquæ rosæ, ℥viij. may be kept constantly applied.

The rhagades will usually be found to heal quickly if the hand be kept quiet, and the unguent. hydrarg. precipitat. alb. either alone, or mixed with a fourth of citrine ointment, be kept constantly applied.

In the early stages of the disease, whilst the affection is limited to a small patch, I have occasionally seen the application of a slice of fresh lemon of service. This, however, is only likely to be successful when the disease occupies a patch of the size of a sixpence or shilling.

In some cases, the disease will have yielded entirely, with the exception of a portion of the circumference of the part originally affected, where it continues most obstinately, slowly creeping on. When this is the case it may most generally be checked by rubbing the part freely with the nitrate of silver in stick.

Whatever local means be adopted, however, the cure, if effected, will not be a permanent one, unless constitutional treatment be had recourse to. This must chiefly consist in the removal of any gastric, intestinal, or uterine disturbance, and in the administration of vegetable bitters, with the dilute nitric acid, or small doses of the bichloride of mercury. I have usually found much benefit from the administration twice a-day of thirty minims of the dilute nitric acid, or the twenty-fourth of a grain of the bichloride of mercury in infusion of cinchona. These means are especially serviceable when the disease occurs, as it most generally does, in pale delicate subjects, who are in an atonic condition.

Occasionally, when the disease has, either from the length of time that it has existed, or from some peculiarity in the constitution of the individual affected, assumed a more obstinate and intractable form, it becomes necessary to have recourse to more active measures, such as the employment of Fowler's or Donovan's solutions.

Whatever treatment be adopted, it will be well to warn the patient of the great likelihood of a relapse in these cases; the disease, though apparently perfectly cured, re-appearing under the influence of the slightest cause of irritation; and, indeed, nothing is more common than to find patients returning four or five times in the same year with fresh attacks of this affection.

Ibid, Feb. 13, 1846, *p.* 278.

172.—*On the Use of Tar in Senile and other Chronic Eruptive Diseases.*—By ——— Wetherfield, Esq.—[On this subject, Mr. Wetherfield pretends to advance no novel ideas. He says,]

The first case related was that of a gentleman, aged ninety, suffering under prurigo senilis, affecting both legs. The common tar ointment was applied every third or fourth day, the parts being afterwards covered with an elastic roller. Under this treatment he recovered in a few days. Two cases of eczema impetiginoides, the first of eight years', the second of one year's duration. In these cases, the internal exhibition of tar in the form of capsules, each containing ten minims, three times a day, was added to the external application, and, in a month, the disease was removed. Two children were shown to the society, who had suffered for five and six years respectively, with eczema capitis, extending in the form of eczema over all parts of the body and limbs. The treatment consisted of capsules of tar taken three times a day, and tar ointment applied every day to all parts affected. Under this plan, continued for about two months, they perfectly recovered. Two cases of acne punctata, which had resisted all treatment, all opathic and homœopathic for three years, and had disfigured the parties by the spotted and blotched face which this disease induces, yielded to the same treatment in between two and three months. From three to six capsules were taken daily. A little of the tar ointment was applied at bed-time towards the end of the course, and washed off in the morning, and this only to the larger pustules. Mr. Wetherfield concludes his paper by stating, that his object in bringing this old remedy once more before the profession was to induce them to give it a trial, especially in the capsule, feeling persuaded that it would be found a valuable medicine, whenever it was requisite to excite the capillary system, either in the skin or kidneys.

[Dr. Merriman states that Alibert and Dr. Seymour have been in the habit of using the same remedy.]

Mr. Wetherfield had used the capsules with a good result in cases of obstinate gleet and of chronic bronchitis; he had used the tar externally and internally, in a case of prurigo formicans, but sufficient time had not yet elapsed to determine that it was quite successful. The tar capsules were easily swallowed, even by children, and the remedy did not disagree with the stomach. It appeared to have a slightly aperient, a diuretic, and diaphoretic effect.

Lancet, Jan. 17, 1846, *p.* 72.

173.—*On the Treatment of Pityriasis.*—By James Startin, Esq., Surgeon to the London Cutaneous Institution.—[Mr. Startin considers the causes of pityriasis to be the same as those of other squamous diseases, and, consequently, will require, in many respects, similar treatment. In pityriasis, however, the external applications should be of a soothing nature—baths medicated, with mucil-

age of linseed, milk, yolk of egg, glue, &c.; at the same time internally we should give demulcents and mild diuretics to increase the renal secretion, in order to provide a substitute for the suppressed efferent action of the skin. Mr. Startin also uses a substance called glycyrrhine, as an external application. It possesses several advantages peculiar to itself, which Mr. Startin points out in a lecture delivered by him on this subject. It is a method of treatment never previously laid before the profession.]

It consists in the employment of a liquid lately discovered that has the property of remaining fluid, and resisting evaporation, under any temperature to which the body can be exposed: indeed, I have wetted a common dinner plate with this fluid, and kept it in an oven whilst a joint of meat was cooked by its side, and the liquid has experienced no evident change or diminution. The facility with which this body mingles with water or other fluids, renders it an invaluable adjunct to lotions, poultices, and applications, whose utility consists not only in diminishing temperature by evaporation, but in softening and relaxing the heated and inflamed skin. The tendency to dry up and adhere to the part, as is well known, often frustrates the beneficial effects of these applications, and various counteractive expedients have consequently been adopted, as the addition of fatty matters, covering the poultice, lotion, &c., with oiled silk. Now, this is rendered entirely unnecessary by the addition of the substance I hand round for your inspection. You will perceive it is like oil, and when rubbed upon the skin, it furnishes a watery coating or varnish, which even the microscope fails to distinguish as different from the ordinary secretions of the part. Half an ounce of this liquid, added to half a pint of lotion, will prevent the skin ever becoming dry. In baths, the result is also equally apparent; but here the cost is an obstacle, though the liquid is by no means dear, as, at the present time, tons of it are thrown away; but if, as I anticipate, its application prove general, its price will be shortly augmented. This fluid body, to which the chemists have given the name of glycyrrhine, is a peculiar uncrystallisable saccharine matter, found in animal fats or oils, or produced during their admixture and combination with alkalies and oxides. Thus, it is most abundant in the refuse of the soap-maker. That which you are now inspecting was procured from Apothecaries' Hall, and is formed during the manufacture of lead plaster on a large scale. I should mention that it requires to be diluted with water for use, otherwise it makes the skin feel stiff, uncomfortable, and sticky.

Medical Times, Feb. 7, 1846, *p.* 368.

174.—*On the concentrated alcoholic solution of Stavesacre as a cure for the Itch.*—By Thomas H. Burgess, M.D., &c.—[Dr. Burgess has lately assisted at some interesting researches at the Hospital of St. Louis, into the history of the *acarus scabiei*, and the treatment of the disease it produces. He brought the subject

before the Royal Medical and Chirurgical Society in March last, and described the method of using the alcoholic solution of staves-acre for the treatment of this disease, as follows:]

The hands of the patient were immersed in two vases filled with a strong alcoholic extract of stavesacre, and retained for half an hour. The hands were now examined by the microscope, and several acari removed. In this instance the remedy was not entirely effectual, as some of the acari were still alive. The remedy was again applied for half an hour, when not a single living acarus was discovered; they were examined under the microscope, and showed no signs of life. On the following day the same experiment was repeated on another patient, using the same precautions, and with the same success, for on examining the acari, not the least sign of life was discovered in any. The patient was examined again on the following morning;—he said he was entirely free from itching; the skin was paler, and there was no living acarus found in the parts to which the extract had been applied. The author states he has satisfied himself that it is not the alcohol that destroys the acarus, for when used without medication it has not succeeded. He concludes by referring to the advantages presented by this mode of treating itch over the ordinary treatment, viz., rapidity and cleanliness.

Mr. Lloyd cures the itch by a lotion, consisting of an ounce of sulphate of copper to a pint of water; this he applies after washing off the scabs; it is an almost certain cure: he employs it in private and public practice.

Dr. Ogier Ward treats scabies by a simple lotion of the iodide of potassium, a single washing with which, in some instances, completely eradicates the disease. The treatment of this affection was by no means difficult. To insure complete success, he applies the sulphur ointment at night, and the lotion during the day. It usually effects a cure in seven days. The lotion consists of one drachm of the iodide to eight or sixteen ounces of fluid, according to the delicacy of the cutaneous surface.

Medical Gazette, April 3, 1846, *p.* 608.

175.—*Singular case of black secretion from the skin of the Forehead and upper part of the Face.*—By William Teevan, Esq.—[In the last Vol. of the *Medico-Chirurgical Transactions*, Mr. Teevan has recorded a remarkable case; the patient, a girl fifteen years of age, was the subject of this remarkable discoloration. It was first observed in January, 1845, on the left under eyelid, and internal angle of the eye. It was at first of a brown colour, but soon became black, and spread over the forehead and eyelids of both eyes. The black secretion thus formed could be washed off, and was sufficient to discolour a large quantity of water: when it was being secreted, there was a burning heat in the parts, and so decided was this, that she could tell within a quarter of an hour when the blackness would show itself. It invariably commenced

in the same situation, and spread as noticed above. Mr. Teevan states he has no knowledge of the physiological cause of the disease; the secretion he considers analogous to melanosis. There is no other case of a similar description on record.]

Medico-Chirurgical Transactions, Vol. 28, p. 611.

176.—*Phlegmonous Erysipelas.—New Mode of Treatment.*—By M. GERDY.—[M. Gerdy has paid considerable attention to the etiology of phlegmonous erysipelas in the extremities.]

M. Gerdy attributes the disease to the naturally declined position of the extremities, to the stagnation of the blood in the peripheral capillaries of the latter, in consequence of which the contused part first becomes superficially inflamed under the form of erysipelas, and, subsequently, more deeply under that of phlegmon: and, if not speedily remedied, by the means we are about to indicate, the disease passes into that of suppuration, the consequence of which is, the formation of dissecting abscesses, and separation of the integuments to such an extent as to necessitate amputation or produce death. Erysipelas seldom assumes the phlegmonous or suppurating character in the head or neck; and for the reason, says M. Gerdy, that the cause we have first indicated does not operate there, the venous circulation being free and descending.

[From this view of the cause M. G. considers that the great object in treatment, should be to prevent stagnation of blood in the extremities and this he effects by *position*, and the result is most striking.]

Monthly Journal of Medical Science, March, 1846, p. 210.

177.—*Treatment of Warts.*—The hydrochlorate of ammonia dissolved in water, and the hydrochlorate of lime are the most certain means of destroying them; the process, however, in both instances is very slow, and demands perseverance, for if discontinued before the proper time, no advantage is derived.—*Eisenberg's Advice on the Hand.*

Dublin Medical Press, Nov. 26, 1845, p. 342.

OPHTHALMIC SURGERY.

178.—ON THE TREATMENT OF INFLAMMATION OF THE EYE.

By Dr. JACOB, Dublin, F.R.C.S.I.

[Dr. Jacob remarks that the treatment of inflammation of the eyeball ought to be upon the same general principles as that of inflammation in other parts. He says,]

The heart's action is to be weakened and the size of the capillary vessels reduced by diminishing the quantity of circulating blood by bleeding; and that weakness of the heart's action and reduction in

size of vessels is to be continued by nauseating medicines until the local vascular disturbance is subdued, or until the attempt is found fruitless. The supply of new blood is at the same time to be cut off by removing the contents of the intestine by purgatives and a denial of nutritious food; while the secreting powers of the liver, kidneys, and skin, are to be put in requisition to rid the fluids of pernicious ingredients, should such be present. These are the resources of medicine in the first or acute stage of the disease, but when the inflammation proceeds unchecked other remedies must be employed. In what I consider the second stage the effects or consequences of inflammatory action are to be prevented or arrested, such as adhesion, effusion, opacity, thickening, and complete disorganization, with loss of healthy functions; and this is to be effected by medicinal agents exercising peculiar or specific influence, the nature or direct operation of which we do not well understand; of which mercury, iodine, bark, colchicum, and turpentine, are the principal. In the third stage, when the inflammatory action has entirely subsided, and its more permanent consequences only remain, the efforts of the practitioner are directed, often in vain, to effect the stretching of adhesions, the restoration of transparency, and the revival of sensibility and muscular contractility, by the application of belladonna, and the internal administration of mercury or iodine in smaller doses and for longer periods, with local stimulation and cutaneous irritation.

[Many practitioners consider that local inflammatory action is best arrested by the frequent abstraction of blood. Dr. Jacob thinks this method has little claim upon our confidence; he says,]

It should be recollected that we seldom see these cases at the very commencement of the attack when the abstraction of blood would be most beneficial, most persons considering what they call a "sore eye" of little importance until alarmed by the redness, pain, and defective vision. They are oftener presented to us after the vessels have become permanently enlarged, and the inflammatory condition has been firmly established; and then it is, that the propriety of bleeding comes to be questionable. Inexperienced persons think that when they see the eye very red, it is necessarily in a state of inflammation, but this is a great mistake, for the redness or increased vascularity may be but a consequence of inflammatory action which has ceased or has been subdued. Bleeding, therefore, should in my opinion be resorted to, if considered necessary, at the very commencement of the attack, when a hope can be entertained that by weakening the heart's action and reducing the size of the capillaries, the disorganizing processes of inflammation may be prevented: to delay it until that stage arrives in which diminution in quantity or deterioration in quality of the circulating fluid might rather retard than promote the salutary processes of the system, appears very injudicious.

[The quantity of blood in the system ought not only to be diminished from without, but also the supply from within, by

removing the contents of the alimentary canal, and interrupting digestion, chylification, and absorption. Dr. Jacob thinks the best medicine for unloading the primæ viæ in these cases, is a combination of calomel and compound colocynth pill. He observes,]

In those cases which are repetitions or returns of former attacks repeatedly treated with mercury, I generally try depletion and antimonials, with confinement to bed and low living, for two or three days, before I resort again to that remedy, and often with success. I give tartrate of antimony or James's powder at first to cause slight nausea occasionally for about twenty-four hours, and for another day or more continue it as a diaphoretic.

Mercury, which above all other remedies, is most to be relied on in the treatment of inflammation of the eye, remains to be noticed. That it is a medicinal agent capable of exercising a powerful, peculiar, and, perhaps, unexplained influence in arresting inflammation of the eye, as well as inflammation of other parts, seems to be now very generally admitted, and can scarcely be denied. It probably, however, acquired its character in this respect from its effects in syphilitic iritis, which are unquestionably more decisive than in any other form. That iritis or inflammation of the eye may be removed by depletion and other general remedies, and that it may even cease or disappear without any medical treatment, must be admitted; but it must also be admitted, that its removal is accelerated and rendered more certain by the administration of mercury. In some other parts of the body inflammation may, perhaps, be encountered by general treatment only, or may be permitted to take its course and wear itself out without destructive consequences, but in such an organ as the eye, the construction of which is so exquisitely delicate, and the component parts so numerous, minute, and complicated, the changes produced by inflammatory action must be prevented by every means in our power, no matter what the risk may be of causing constitutional disturbance or any other mischief or inconvenience. The form in which it is to be administered, the quantity to be given, and the time for which it should be continued, must depend on the age, constitution, and peculiarities of the patient, the activity of the symptoms, and other circumstances. In common cases of simple uncomplicated inflammation, with foul tongue, defective discharges from the bowels and kidneys, I am in the habit of commencing with mercury in combination with a purgative and antimonial, giving about three grains of the blue pill with as much compound colocynth pill and an eighth or tenth of a grain of tartrate of antimony three times a-day for a couple of days, then five grains of the blue pill with the same quantity of the antimony for about two days more, and, finally, five grains of the blue pill three or four times daily, adding a little opium if it continues to affect the bowels. This I generally find sufficient to produce the mercurial effect in six or eight days, and perhaps a more rapid introduction of mercury into the system is unnecessary or even injurious. Should the

practitioner, however, consider a more decisive administration of the remedy necessary from the activity of the symptoms or the inactivity of this preparation, a couple of grains of calomel with a quarter of a grain of opium, may be given every four or six hours, and beyond this I never find it necessary to go. The length of time during which the mercury should be continued or the exact quantity to be given, has not been determined by exact experiment, neither, perhaps, has it been ascertained whether or not this medicine exercises its peculiar specific influence without displaying its effects on the gums and salivary glands. In syphilitic iritis the inflammation generally begins to give way about the fifth, sixth, or seventh day, and is often subdued in another week; but in simple inflammation of the eye the effect is not so soon or so certainly produced. The safest course will, therefore, probably be to give the mercury until the state of the gums or the state of the eye proves that it is causing its usual effects, and to continue its administration until the inflammation subsides, or until it is proved that perseverance is useless. It is scarcely necessary to say that it need not be given to the extent of producing ptyalism, but merely persevered in until its presence in the system is obvious, and if the inflammation yields without any tenderness of the gums or other mercurial symptoms, the surgeon may, perhaps, be satisfied without this evidence of the influence of the remedy.

Dublin Medical Press, April 1, 1846, *p.* 193.

[In the treatment of ophthalmic diseases, it should be borne in mind, that unless the production of ptyalism be absolutely necessary, it should not be hastily produced. Mr. Lawrence notices the two opposite opinions which are extant respecting the simple antiplogistic and mercurial treatment of iritis: he says,]

Although mercury alone, or at least in conjunction with purgatives and restricted diet, will often cure iritis, I have seen many instances in which the sufferings of the patient have been protracted, and the organ has experienced serious injury from the continued progress of the inflammation, when the use of mercury has not been preceded or accompanied by the loss of blood. The practical conclusion, therefore, at which I have arrived after ample experience of the complaint under every variety of treatment, is, that iritis generally, and the syphilitic form of the complaint particularly, will be most advantageously treated by the successive or combined employment of antiphlogistic means and mercury; that this plan will give the quickest relief, will most effectually arrest the inflammation, restoring the iris to its healthy structure and functions, and will afford the best security against the return of the disease.

[It is probable there are some other remedies which have a direct influence in checking iritis; but it is very questionable whether they ought to be substituted for mercury in the treatment of this disease. . Dr. Jacob observes that]

Iodine, turpentine, colchicum, and bark, are valuable remedies, where the inflammation is modified by specific disease, or general constitutional derangement; or where mercury has already been given, or cannot with safety be used; but in a recent acute attack, occurring for the first time in a person of otherwise good health, they are scarcely to be relied on in preference to bleeding, mercury, and the other means noticed. In fact, the powers of these remedies have scarcely been fairly tested in consequence of the reliance placed in depletion and mercury: they have been generally reserved until the others have failed, or they have been adopted because the others have been found inadmissible.

Ibid, April 15, 1846, *p.* 225.

[Dr. Jacob gives us some valuable hints on the use of *Belladonna* in ophthalmic cases. He says, on this subject:]

Of all the injurious effects or consequences of iritis the most frequent is adhesion of the iris at the margin of the pupil to the capsule of the crystalline lens, and to prevent this every effort should be made. I have already expressed my belief that in a perfectly formed eye at the earlier periods of life the margin of the pupil touches the capsule of the lens when the aperture is contracted, or even in its ordinary state between dilatation and contraction; it follows, therefore, that if these surfaces become inflamed, adhesion between them will probably take place, and experience proves that it does so. From the very commencement, therefore, the extract should be applied, and should be continued until the inflammation subsides. It should be mixed with water until it acquires the consistence of paint, and will flow from a camel-hair pencil without running off from the skin, and should be freely applied to the eyelids, brow, and upper part of the cheek. I generally paint the surface twice, allowing the first application to dry before I make the second, and thus I secure a sufficient quantity in close contact with the skin. I then, when it adheres, lay a scrap of damped old linen over it to keep it moist; because I believe that its effect is more certain and powerful when in this state than when dry, and I direct a lotion of one or two drachms of the extract to eight ounces of water to be used to moisten the fold of old linen from time to time for an hour or two, and even to continue the application as a cooling lotion if the patient feels it agreeable. If, however, local applications are not found comfortable, or do not appear to be useful, the belladonna need not be applied more than once, or at most, twice in twenty-four hours, because its effect on the iris continues for a day at least, and sometimes much longer. It is also sometimes necessary to restrict its use to a daily application in consequence of its causing irritation of the skin, or even slight excoriation or eruption. When this happens, I apply it once a day, as described, and after an hour, have it carefully washed off with a large camel-hair pencil or very soft sponge, smearing the surface when dry with cream. It should be recol-

lected that in some persons, and especially in the aged, the effect is not produced on the pupil by the application to the skin, probably in consequence of the cuticle being too thick or harsh. When I apprehend this, I use the remedy more freely, and keep it on longer in a moist state. It is also to be recollected, that the belladonna will dilate the pupil when applied to the conjunctiva, while it has little or no influence when applied to the skin. Keeping this in mind, I sometimes venture, even during inflammation, to drop a fluid extract between the lids, which of course causes some irritation, but perhaps does little if any mischief, while it promises benefit by securing dilatation of the pupil, and thus preventing adhesions. As this narcotic locally applied is often found to allay pain, especially in neuralgic affections, there can be no objection to its use in inflammation of the eye, and therefore it may be used, although it should not cause dilatation of the pupil. I have already stated that in the early or acute stage of severe inflamation the iris loses it power, and the pupil not only ceases to act, but is unaffected by the application of belladonna; I do not, however, discontinue its application on that account, because as soon as the inflammation is reduced, it begins to produce its effects, and either prevents adhesions, or if they shall have been formed, stretches or ruptures them. It may perhaps be supposed that too much importance is attached to the use of belladonna in inflammation of the iris and its consequences; but when it is recollected that contraction and adhesion of the pupil so frequently take place during its progress, and cause so much defect of sight, such a powerful means of preventing them should not be undervalued. It even sometimes, when the adhesions are very few and slender, ruptures them; although less frequently than is perhaps generally supposed. To effect this, at this period, I always apply the belladonna to the conjunctiva, as one drop of fluid extract used in this way is as effectual, if not more so, than a large quantity of the extract smeared on the eyelids. The extract itself, softened with water, or even a watery solution of it, will answer the purpose, but as it contains insoluble matter which forms a clot between the lids, a purified preparation should be preferred. It may be rubbed up with a little alcohol to coagulate the albumen contained in it, and then with water in sufficient quantity to render it so fluid that the insoluble matters will subside; or the atropia itself, or some of the salts of it, may be used in solution. I have obtained a solution of two grains of nitrate of atropia in one ounce of water from Mr. Donovan of this city, which causes full dilatation of the pupil with very little irritation of the conjunctiva. When the belladonna is applied to stretch the adhesions of an adherent pupil, and to enlarge the contracted opening for the admission of more light, after inflammation has disappeared, it should be used once at least in twenty-four hours. I prefer using it in the morning, because if applied at night the effect is diminished before the next day when it is most required. If the object be to stretch or break recent adhesions, it may be used both night and morning. After having been

dropped into the eye, the lids should be closed and light excluded for twenty minutes or half an hour. In the sound eye of a young subject the pupil dilates in twenty minutes or half an hour, and continues dilated for twenty-four hours, and sometimes for two or three days or more.

Ibid, May. 6, 1846, *p.* 273.

[This substance is not only useful as an application to the eyelid for the purpose of dilating the pupil, and also acting as a sedative in many cases of iritis, but it may be used with advantage, greatly diluted, to the surface of the eye itself. In the *British and Foreign Medical Review*, a reviewer says: "In our experience, few cases of scrofulous ophthalmia have resisted the careful use of a belladonna collyrium, and in many other varieties of inflammation of the eyes, it proves scarcely less useful."]

British and Foreign Medical Review, Jan. 1846, *p.* 164.

179.—*On Dilatation of the Nasal Duct in Fistula Lachrymalis.* —By A Reviewer in *Dr. Forbes's Review.*—[This disease consists of a closure of the nasal duct, causing the tears to flow over the face; the sac often inflames and suppurates, producing an opening on the face, through which the pus and tears escape. Palliative measures are frequently of no avail, and the only method of cure is to keep the duct open, which is done generally by passing a style into the nasal duct, which the patient is obliged to wear constantly. It is very unsightly, and may be avoided by opening the duct through the natural orifice by means of a beautiful little sound and catheter brought into notice by Mr. Morgan. These instruments are shaped very much like the common catheter, with a greater curve near the handle, and of course very diminutive in size. The reviewer says,]

Any one with a little practice can open the nasal duct through the natural orifice, as easily as he can pass a catheter along the urethra. The profession is under great obligation to Mr. Morgan, of Guy's Hospital, for introducing this plan of treatment. We have repeatedly practised it with invariable success, and believe that it only requires to be more generally known to be almost universally adopted.

The instrument which we use differs from that described in Mr. Morgan's work, and if any one will take a skull and the two instruments, he will find that the one here described passes with much less catching against the walls of the passage. We also find this advantage hold good upon the living subject. Of course some little variation of the curve will be required according to the formation of the passage in different patients. The instruments are of silver.

In an acute case, as a general rule, the opening on the face need never be made. Leeches, &c., are applied, and the passage freed by the probe and injection of warm water by the catheter. In a chronic case of fistula the same mode of keeping the duct open

must be employed, either for the cure of the fistula, or, if the patient have worn a style, to enable him to dispense with it. The sound is first passed along the floor of the nose, its point directed outwards, until it lies fairly below the inferior turbinated bone. By turning the flat handle the point is then directed directly upwards, and moved gently backwards and forwards along the inferior surface of the turbinated bone, until a little cartilaginous ridge is felt. This is the edge of the orifice of the duct. The point is glided over it, and then, by depressing the handle, the instrument readily glides along the duct. No force must be used, as the bony structures around are very delicate. If much resistance be met with, from an old stricture, the point only must be passed into the stricture, and allowed to remain a few minutes. By repeating this daily, the obstruction is gradually, if slowly overcome. In one case we found it necessary to pass the instrument daily, for upwards of a month. Assistance is also derived from cleaning the passage by the injection of warm water through a catheter of the same size and curvature as the sound. When once the passage is free, the tears descend, and all danger of a return of the disease is prevented by teaching the patients to pass the instrument for themselves. This they soon do with a little practice before a looking glass. The sound may be used once or twice a week, and the catheter daily. It is seldom safe to omit their use altogether, as collections of viscid mucus, or recontraction of the duct, are very liable to occur, and the short time occupied at the dressing table is a very slight set off against the relief obtained by leaving off the style, or avoiding its insertion altogether. We do not hesitate to say, that any surgeon who once practices the nasal method of dilatation will for ever banish the style from his instrument case.

Ibid, April, 1846, *p.* 311.

180.—*On Wounds of the Eyelids.*—Dieffenbach insists strongly on the advantages of his fine insect needles in producing union by the first intention. A sufficient number must be applied to effect exact apposition. If the edges do not correspond, they must be made to do so by the use of fine scissors. If a large piece of skin be lost, and the edges cannot be united, subsequent ectropium is avoided by making an incision a quarter of an inch from the edge of the wound, which allows the edges then to be united. Opening of the lids during the healing process to be prevented by a strap of plaster, carried over them both. About the third or fourth day the needles are to be carefully removed, and the adherent wound supported by strips of plaster, to prevent reopening. If the needles are properly applied, no scar remains.

Ibid, April 1846, *p.* 308.

181.—*On the Depression of the Lens in Cataract.*—By Dr. Watson, F.R.S.E., &c.—It forms an important object in this operation, to disengage the lens from its capsule before depressing it. This

must be done very carefully and methodically, by making an incision in its posterior part, through which the lens is to be pushed into a breach made in the vitreous humour, not by forcibly pressing the lens against the membranes, but by the needle.

To accomplish this, I introduce the small cataract bistoury through the coats of the eye, about a line and a-half from the margin of the cornea. It then penetrates into the vitreous humour, and is made to form a breach in it, at the proper place for the reception of the lens when depressed. The point of the instrument directed forwards to the lens, is then to be pushed across the eye to the opposite or nasal side of the lens. When it has reached this situation, the point is to penetrate the posterior part of the capsule, and, by drawing it outwards, made to incise it across at its middle, from the nasal to the temporal margin. This being effected, the point of the needle is to be pushed forward between the lens and the iris, its flat side placed on the lower part of the lens, and made to press it backwards and upwards, so that its lower margin may pass backwards through the opening made in the posterior parts of the capsule; by then shifting the point of the needle forwards upon the lens, it is gradually pressed backwards and downwards into the breach of the vitreous humour, from whence it never rises. Thus we accomplish by previously cutting with the needle, what has been generally recommended to be done by forcible pressure upon the lens. Little or no inflammation follows this operation.

If, in this operation, the anterior part of the capsule of the lens remain entire, it is so far well, as the humours in the different chambers of the eye are thus prevented from incorporating, which lessens the risk of subsequent inflammation. If the capsule afterwards becomes opaque, it can easily be removed by a subsequent operation.

In performing this operation, considerable dexterity of management is required for opening the capsule, disengaging the lens, and depressing it into the vitreous humour; and as the capsules, being generally transparent, are invisible, each of the different steps of the operation requires to be methodically executed. The same mode of operating answers for reclination.

If, contrary to expectation, the lens is found to be soft, it may be broken to pieces, and these, or some of them, depressed into the vitreous humour where they will dissolve.

Edinburgh Medical and Surgical Journal, Jan., 1846, *p.* 66.

182.—*On the Treatment of Accidental Cataract.*—By Mr. Walker, Manchester.—The treatment of accidental cataract is conducted in two different modes, according to the views entertained by different surgeons. The common method is to allow the natural absorbent process to proceed with but little interference on the part of the surgeon. If there be much inflammation, leeches are applied and mercurials administered, as in a case of internal ophthalmia; the belladonna is also freely applied to maintain a

dilated condition of the pupil. With this treatment, in favourable cases, absorption gradually proceeds, the substance of the lens is removed, and finally the pupil becomes clear with the exception of the capsule, or a conderable portion of it, which requires to be treated as secondary capsular cataract. In less favourable cases it often happens that a considerable degree of inflammation comes on, which is protracted for a long period of time, and terminates in closed or contracted pupil; the iris and capsule being agglutinated, and the latter converted into a thick, tough, opaque membrane, which is impervious to light. Bearing in mind the strict analogy which exists between a case of accidental cataract, and that in which the lens has been designedly broken up by the surgeon, we shall see the propriety of following up the practice adopted by Mr. Gibson, of early removing the fluid mass of cataract by extraction through a small incision of the cornea. This method was first employed by Mr. Barton. The puncture is to be made at the temporal margin of the cornea with the extraction knife, the point of the instrument being carried into the pupil, when the lens will frequently be discharged with the aqueous humour; if it do not escape in this manner, the knife must be withdrawn, and a scoop introduced through the aperture of the cornea into the pupil, when the softened cataract usually passes out with the greatest facility.

It has been urged as an objection to the performance of this operation, that, as there is generally a considerable amount of inflammation present in all cases of cataract induced by injury, such a proceeding shortly after the accident would be likely to add to, rather than diminish, the disordered action. This, however, is not found to be the case in practice. On the other hand, the irritation and suffering which, in most instances, succeeded to the laceration of the capsule and breaking up of the lens, will often be materially relieved by the removal of the irritating body from the eye. Such a result I have witnessed in a very many instances.

[Since these remarks were published, Mr. Walker has constructed an instrument which combines the properties of both the knife and the scoop;—as soon as the incision of the cornea is made, the fluid lens passes along the groove or scoop of this *grooved needle knife*, and the pupil remains quite clear.]

Medical Times, Nov. 29, 1846, *p.* 194.

183.—*Case of Traumatic Cataract.*—By Mr. Walker, Manchester.—[Mr. Close reports a case of traumatic cataract, which was treated at the Manchester Eye Hospital, by Mr. Walker. A piece of iron flew with much force against the patient's right eye whilst at work as a mechanic. Mr. Close reports:]

On looking at the eye, it is evident that the cornea has been cut in a perpendicular direction directly through its central portion, the edges of the wound being slightly uneven and covered with a layer of lymph; the iris appears to have escaped uninjured,

the pupil being moderately regular, but rather contracted; the capsule of the lens is opaque, and a portion of opaque lens protrudes through the pupil. The globe is highly vascular.

[He was to have calomel gr. ij, opii. gr. ss. at bed-time. Belladonna applied at night, and lead lotion through the day; next day, there was no amendment. The intolerance of light was very severe, and it was decided to puncture the cornea, and give exit to the broken up lens.]

The *groved-needle knife* was accordingly introduced at the outer margin of the cornea and its point pushed into the pupil. By this operation a small portion only of the dissolved lens passed along the groove of the instrument, the larger part, in consequence of the pressure, being forced through the wound in the centre of the cornea. This was followed by the immediate restoration of sight. He was then directed to be removed to bed and have a belladonna plaster placed over the eye.

On this case Mr. Walker remarks, "A remarkable circumstance, which I have more than once witnessed, is the protrusion and discharge of the dissolved lens through the wound of the cornea, on the introduction of the instrument into the eye. Another interesting point connected with the case is the rapid recovery after the removal of the foreign body (the broken-up lens) notwithstanding the severe penetrating wound of the cornea, effected too by an obtuse body coming forcibly in contact with the eye. The rapidity of recovery is generally in a tolerably exact ratio to the healthy condition of the patient. If he be of a sound constitution, the eye soon recovers from the effects of the injury when the source of irritation is removed; if, on the other hand, he be of a delicate or strumous habit, he will certainly be the subject of a lingering attack of ophthalmia, commonly terminating in disposition of lymph into or across the pupil, and a consequent obliteration of that aperture. This, however, is less likely to be the case when the lens is removed by an early operation. Another important consideration consists in the great saving of time for the patient, a point of much interest to a labouring man. Had this case been allowed to proceed without the extraction of the lens, a long and tedious process of inflammation would have had to be combated, the wound of the cornea would not have healed during the continuance of the inflammatory action, and the patient must have lost many weeks of valuable time. I remember an analogous case in which, on puncturing the cornea, three or four weeks after the receipt of the injury, the dissolved lens was forced through the wound of the cornea, as in the case now reported, so that it was evident no attempt at reparation had been made in that long period of time."

[We have examined this grooved needle, and think it may prove a useful instrument.]

Medical Times, Dec. 27, 1845, *p.* 255.

MIDWIFERY,

AND

THE DISEASES OF WOMEN.

184.—SUGGESTIONS REGARDING THE ANATOMICAL SOURCE AND PATHOLOGICAL NATURE OF POST-PARTUM HÆMORRHAGE.

By J. Y. Simpson, M.D., F.R.S.E., &c. &c.

[The whole question of extraction of the placenta in cases of placental presentation, as recommended by Mr. Kinder Wood, of Manchester, and lately by Drs. Simpson and Radford, seems to hang, in a great measure, upon the truth of the following arguments and facts, brought forward by Dr. Simpson. It is a subject of so much consequence to the lives of our fellow-creatures, that we have felt very diffident about advancing our own views of the subject, and have generally preferred giving the first authorities on both sides of the question, and leaving our readers to judge for themselves. The following interesting paper by Dr. Simpson, we copy entire from the *Northern Journal.*]

The non-occurrence of hemorrhage from the uterine vessels, after the complete detachment of the placenta in ordinary parturition, is probably not explicable, as is generally imagined, upon the sole circumstance of the simple and absolute contraction that occurs in the uterine fibres after delivery. We know, from the observations of Gooch, Velpeau, Rigby, and others, that post-partum hemorrhage sometimes supervenes when the uterus appears contracted and reduced to its usual size after delivery. On the other hand, numerous facts show that there is little or no tendency to hemorrhage after the perfect expulsion of the placenta, although this simple and absolute contraction of the uterine fibres be, at the time, so far prevented by the presence *in utero* of a full-grown fœtus, as in those placental presentations in which, as occasionally happens, the after-birth is expelled or extracted before the child. When the child is born in ordinary labour, and the placenta happens to be retained from *want* of uterine contraction, hemorrhage does not necessarily supervene. It is well known that Ruysch, William Hunter, and others, adopted, for a time, the practice of leaving the placenta in utero for hours and days till nature herself threw it off, and that they were at last forced to abandon this line of treatment,—not because uterine hemorrhage was liable

to supervene, because the dead and retained organ was found to become putrid, and to give rise to symptoms of severe irritation and fever. Again, after the complete evacuation of the uterus in common parturition, and the total removal of the placenta, hemorrhage does not necessarily supervene, though the uterine fibres are not in a state of firm contraction. We often find them alternately relaxing and contracting when after-pains supervene, and yet the general relaxation that is observable between the pains may not give rise to the slightest degree of flooding. Every practitioner has had occasion to watch with more or less anxiety, the uterus remaining of considerable size and softness for some time after delivery, and consequently with its fibres not firmly contracted, but without after-pains, and without hæmorrhage supervening. In the same way, in some cases of placental presentation after the placenta has become expelled, and while the child remains in utero, the labour pains have ceased; and still, notwithstanding this cessation, not only has no hæmorrhage followed, but, on the contrary, the flooding that previously existed, has immediately ceased.

No doubt the occurence, after the delivery, of great and decided atony in the whole muscular system of the uterus, does assuredly give rise to post-partum hemorrhage. But if I may judge from my own observations, I would venture to remark, that the morbid condition which is most frequently and earliest seen in connection with post-partum hemorrhage, and which is specially remarkable in cases where the flooding is more enduring than usual, is a state of irregularity, and want of equability in the contractile action of different parts of the uterus—and, it may be in different planes of the uterine fibres—as marked by one or more points in the organ feeling hard and contracted, at the same time that other portions of the parietes are soft and relaxed—and by the contracting and relaxing fibres, slowly but frequently changing their relative situations.

Upon the same principle, I believe that in attempting to prevent or remove the morbid condition leading to post-partum hemorrhage, when it is functional in its nature, and not connected with any organic or traumatic causes, we ought to endeavour to produce not merely a certain *degree and amount* of uterine contraction, (the great and primary practical point to which we always justly look,) but also a certain *equability and uniformity* of contraction. At the same time I would repeat, that this part of the subject, like the whole question, of the manner and means by which hemorrhage is prevented from the exposed uterine veins, after every case of ordinary labour, stands, in my opinion, in need of new, careful, and extended investigations. I have, however, at present, no desire to encounter so wide and complicated an enquiry; and shall content myself with stating in reference to the subject, the following suggestions.

First, Uterine hemorrhage after the separation of the placenta in any of the stages of labour, is *not Arterial* in its character. The

utero-placenta arteries are numerous, but so long and slender as to become readily closed; 1, By the tonicity of their coats; 2, by contraction of the uterine fibres upon the course of these vessels themselves as they pass through and amid the uterine structure; and, 3, and principally, by the changes in their tissues produced by the mechanical rupture of their coats,—*torn arteries* being little if at all liable to bleed,—and the placenta being separated by a true process of *avulsion*.

Secondly, Hemorrhage, therefore, under the conditions supposed, is *venous* in its source and nature. Further, it is specially important to mark that it is a *venous hemorrhage by retrogression*. The *forward* course of the uterine and utero-placental venous circulation, is from the dilated maternal capillaries or cells of the placenta towards the periphery of the uterus, and the ovarian and hypogastric venous trunks. In uterine hemorrhage, the blood that escapes, instead of flowing onwards regurgitates *backwards* into the uterine cavity.

Thirdly, The mechanism by which, after the separation of the placenta, this retrograde course of the venous circulation towards the cavity of the uterus, so as to lead to hemorrhage, is *prevented;* is probably of a compound character, or is effected by different means. Each of these means may be more or less efficient under different circumstances and at different times.

Fourthly, The most powerful of these preventive measures consists in the uniform and regular contraction of the uterine fibres. By this contraction the canals of the supplying arteries are constricted, and the venous tubes or sinuses which more immediately yield the discharge, are directly compressed. The facility of this compression of the sides of the veins and the consequent diminution of their cavities, is promoted by the naturally thin, flattened form of their canals, and by the fact that the proper contractile tissue of the uterus forms their second coat,—the uterine veins consisting of the usual lining membrane of the venous system placed in direct contact with the muscular tissue of the uterus. At the same time, it is to be recollected, that there seems to be often no direct relation between the degree of uterine contraction and the degree of tendency to hemorrhage. for, as we have just seen,—1, No hemorrhage may be occasionally observed after delivery, though the uterus is not contracted to its usual degree:—and, 2, It may be present when the uterus is apparently well contracted. But, 3, there are, according to most anatomists, few or no *contracting* fibres in the structure of the os and cervix uteri; and certainly after delivery, I have generally, if not always found it remaining open, gaping, soft, and flaccid, even when the proper cavity of the uterus above, felt shut and contracted, and its parietes hard and firm. Still when the placenta is attached to the surface of this *uncontracting* portion of the uterus, as in *placenta prævia*, hemorrhage is not common after its separation, unless some laceration of its vessels has occurred. Here we have post-partum hemorrhage prevented, without the contractile mechanism generally considered necessary for its avoidance being almost in existence.

And 4, in cases of spontaneous or artificial extraction of the placenta *before* the child in some placental presentations, and twin labours, the placental mass may be completely separated, and the uterus still remain *distended* by the presence of a child in its cavity so as to prevent much contraction of its fibres, without hemorrhage occurring. The venous trunks running to the uterus are not supplied with valves; and under the above and other circumstances, by what means in addition to, or in substitution of, the contraction of the uterine fibres, does nature prevent the retrograde flow of venous blood into the uterine cavity,—or in other words, by what means does she prevent uterine hemorrhage?

Fifthly, The structure and mutual relations of the venous sinuses of the uterus seem calculated to obstruct and prevent such a retrograde flow of blood in their tubes as to cause hemorrhage. The uterine veins are large, but of a compressed, flattened form, and arranged in several planes or floors one above another in the uterine walls. On examining these veins in several pregnant uteri, by dissecting them from the outer or peritoneal surface of the organ, downwards towards the mucous, I have found the following arrangement:—Each venous tube gives off numerous communicating branches to the veins of its own plane or floor, by a set of *lateral* foramina. When, however, a venous tube of one plane comes to communicate with a venous tube lying in the plane immediately beneath it, the foramen between them is not in the *sides* but in the *floor* of the higher or more superficial vein, and the opening itself is of a peculiar construction. Looking down into it from above, we see the canal of the vein below partially covered by a semilunar or falciform projections, formed by the lining membrane of the two venous tubes, as they meet together at a very acute angle,—the lower tube always opening very obliquely into the upper. In the folds of these falciform projections, the microscope shows the common contractile tissue of the uterus. Do these semilunar or falciform projections, and the oblique communications of the lower with the higher planes of veins, allow the normal flow of venous blood from the deeper to the more superficial veins of the uterus, while after the placenta is separated, they prevent that anormal or retrograde flow of it from the more superficial towards the deeper-seated venous tubes which would produce hemorrhage? Here, I suppose it possible, that these falciform processes may act upon the same principle as the Eustachian valve, but in a less perfect manner; while by the obliquity of the communications between the different planes of veins, it may be that blood does not so readily retrograde into the deeper vessels in the same manner as urine does not retrograde into the ureters from the bladder, in consequence of the oblique opening of the former into the latter. Do the uterine fibres seen in the venous falciform processes tend to aid this valve-like mechanism by diminishing, under contraction, the apertures between the different planes of veins?

Sixthly, One cause contributing to prevent hemorrhage after

the total separation of the placenta, is the abstraction from the uterine vascular system of the derivative or sugescent power of the maternal circulation in the placental cells, and the consequent tendency of the blood to flow in the more direct and freely communicating channels that exist between the uterine arteries and veins. Besides, the general and direct forward current of the blood along the course of these larger uterine veins diminishes, and, in a measure, destroys the tendency which it might otherwise have either to flow backwards, or to escape by any existing lateral apertures of the vessels.

Seventhly, Among the other remaining means by which hemorrhage is more or less prevented after the detachment of the placenta, I may mention, 1, The occasional presence of tufts of fœtal vessels left in the orifices of the uterine veins, and forming not only immediate mechanical obstacles, but nuclei for the ready coagulation of the blood; 2, The formation of coagula in some of the collapsed venous tubes and orifices; and, 3, The presence for some hours, or even days, after delivery, of the collapsed decidua over the apertures seen in the veins on the interior of the uterus.

To these few and imperfect suggestions I am desirous to add one remark. Several of the natural means of arresting uterine hemorrhage that I have spoken of, admit of extended anatomical examination being applied to their more perfect investigation; and some of the observations that I have ventured to offer, may be yet proved or disproved, by being tested by direct experiments with vascular injections thrown into the dead body.

Northern Journal of Medicine, Jan. 1846, *p.* 1.

[It will be interesting here to give some of the remarks of Weber, on the structure of the placenta, as given in a note by Dr. Willis, at page 201, of his Translation of Wagner's Physiology; as we suspect that one great reason why this subject has not been generally understood, is, that practitioners have not paid sufficient attention to the peculiar anatomical structure of the placenta, and its connection with both the mother and child. These views of Weber are in accordance with those of Eschricht, of Copenhagen. It will be seen, that in their opinion, although there is an intimate connection between the uterine and placental vessels, there is no real communication, prolongations, or folds of both the chorion and decidua being placed between each vessel, so that it is impossible for blood to flow from the mother through the placenta without laceration of the maternal vessels, either in the *substance of the placenta, or at the point where these vessels leave the surface of the uterus.* It is a common error to suppose that the placenta is entirely a fœtal production, whereas it is the joint work of both fœtal and maternal blood-vessels. There are, perhaps, as many maternal as fœtal vessels, and, notwithstanding an opinion of Dr. Ashwell's to the contrary, we suspect that we could not even introduce a trocar and canula into the substance of the placenta, so long as any portion remains a *medium of communication* between the fœtus and

mother, without, as it were, *tapping* the mother as well as the fœtus. We should thrust the tube through both sets of vessels, which (without any real communication except by laceration) constitute the placenta something like a large *sponge*, forming the terminus of the maternal vessels on the one hand, and the fœtal on the other; each terminating by numberless loops or doublings, the maternal carrying arterial blood one way, and returning venous blood the other, and the fœtal in the inverse direction.

It is on the understanding this anatomical structure that we can so easily explain the views of Dr. Simpson, and probably it has been for the want of this explanation and reference to the peculiar cavernous or spongy structure of the placenta, that his opponents have not yet agreed with him. When we know that a great portion of the placenta is thus actually formed by vessels shooting from the surface of the uterus as well as by those from the fœtus, we can easily see how a small laceration of the placenta may actually be draining blood from the mother, *without even the slightest separation of the placenta from the surface of the womb*; and how utterly useless all remedies to stop the flow of blood must be, so long as the placenta remains attached to any part of the surface of the uterus, unless the ruptured vessels be plugged up with coagulum, which in due time they will generally be. When we understand the subject in this way, we shall feel the full force of Dr. Simpson's arguments, and when his practice is pursued with discrimination, we believe it is correct, however we may differ from him in some of his explanations.

In the note of Dr. Willis's, above referred to, Dr. Weber says that Eschricht agrees with him in the following particulars:]

1st. That the arteries and veins of the uterus, the channels of the mother's blood, penetrate in great numbers into the placenta, and are distributed throughout its substance in such wise, that every one of its minutest lobules has a canal carrying the blood of the mother, and so comes into contact with the vessels in which the blood of the embryo is flowing. Here we both differ from Seiler, who believed himself authorised to conclude that no vessels from the mother penetrated the placenta, but that the maternal vessels only came into contact with the surface of the placenta, where it was bounded by the uterus. 2nd. The umbilical arteries of the embryo divide, in the manner of a tree, into very numerous and minute branches, which finally turn round, forming loops and anastomoses, and again collect into larger and fewer branches, which at length unite into a single trunk, and form the umbilical vein. No where do the maternal and fœtal vessels anastomose; no where is there any transmission of blood from the one class of vessels to the other; no where do we encounter open-mouthed terminations of vessels. 3rd. The whole placenta, and therefore every individual lobule entering into its structure, consists of two distinct parts, the one a continuation of the chorion and vessels of the embryo, the other a continuation of the membrana decidua and vessels of the uterus. From the chorion, for instance, dendritic processes or elon-

gations are sent out, which in small ova about a month old are so small and simple, that they are called villi, but which grow by and by into large and numerously divided stems and branches. Into each of these dendritic processes of the chorion there penetrates a branch of the umbilical artery, and a branch of the umbilical vein. Both vessels divide into branches in the same manner as the process of the chorion in which they run. At the extremities of the branched processes of the chorion, the divisions of the umbilical artery come together in loops or coils; these coils, however, are for the most part not simple; the same capillary winds several times hither and thither, and forms several loops; loops are also frequently formed by the anastomising of two neighbouring capillaries. From these convolutions and loopings of the capillaries, little thickenings or enlargements of the extreme divisions of the processes of the chorion are produced. Each particular trunk, with its divarications of the shaggy chorion, forms a lobe or lobule of the placenta, which is covered by the tunica decidua. To this investment many of the terminal branches of the chorion will be found to have grown. It is in the spaces between the divarications of the chorion, that those vessels run which transmit the blood of the mother, and which are prolongations of the uterine arteries and veins; they penetrate in this way to every the most minute lobule of the chorion. 4th. The object of this structure seems to be that the minute, convoluted, greatly elongated, and extremely thin-walled capillaries, in which the blood of the fœtus is circulating, may be brought into the most intimate contact possible, with the larger but everywhere excessively thin-walled canals, in which the blood of the mother is flowing, that the two currents, without interfering with each other's motion, may pass each other to as great an extent as may be, with nothing interposed but the delicate parietes of each set of vessels, that they may exert an influence one upon another, the blood of the mother abstracting matter from that of the fœtus, and the blood of the fœtus taking, in its turn, matter from that of the mother. Eschricht differs from me in this, that he believes the uterine arteries and veins distributed to the placenta are connected together by as delicate, or even a more delicate system of capillaries, as that of the umbilical arteries; and in such a way that two systems of capillaries, that belonging to the child to wit, and another to the mother, are brought into intimate contact. I, on the other hand, believe I have demonstrated that the uterine arteries and veins, once they have entered the spongy substance of the placenta, do not farther divide into branches and twigs, but immediately terminate in a network of vessels, the canals of which are of far too large diameter to permit them to be spoken off as capillaries, and of which the parietes are so thin, that they cannot be shown apart by the most careful dissection. This vascular rete, which connects the uterine arteries and veins with each other, completely fills the spaces between the branched divisions of the chorion, and the extremely thin parietes of the canals of which it is composed, insinuate themselves at all

points into the most intimate contact with the branches and convoluted masses of the capillaries of the umbilical system of vessels. This network of vessels, however, with reference to the passage of the uterine arteries into the uterine veins, performs the same office as a rete of true capillaries, so that it may be regarded as a rete of colossal capillaries. Eschricht maintains that plicated processes of the decidua penetrate the placenta, and may be traced between the branched divisions of the chorion, furnishing the several twigs with a delicate investment, and that these plicæ are the supporters of a capillary rete, by which the uterine arteries and veins are connected in the placenta. I, on the other hand, maintain that the walls of the uterine arteries and veins, where they penetrate the placenta, consist of a very delicate tunic, a prolongation, as it seems, of the inner tunic of the vessels of the uterus, covered with a layer derived from the substance of the decidua; that the inner tunic of the blood-vessels lines the interspaces between the divisions of the shaggy chorion, and that the little masses of convoluted vessels or villi, which terminate the branches of the chorion, penetrate the canals which transmit the blood of the mother, and are bathed by it in their interior. In my mode of stating my views, I must, I fear, have left room for misapprehension, as I could perceive in the course of my conversation with Eschricht, that I had not been understood in the way I intended. I have not, I imagine, explained with sufficient clearness what I mean by *villi that penetrate the vascular canals of the mother.* This deficiency I take occasion to supply here. I do not, then, understand by villi entire stems of the chorion with all their subdivisions, as they appear when they are torn forcibly out of the placenta, but small projections or elevations that occupy these in points, or occur over every part of the stems and branches, and are formed by the terminal loopings and communications of the embryonic placental capillaries. Magnifying glasses are required to perceive these proper villi distinctly. In the second place I have said, " the vessels of the uterus that penetrate the placenta become wider when they have entered it. This expression is objectionable, at least in reference to the veins of the fully developed placenta, and I would therefore recal it." Weber then goes on to describe the structure of the placenta particularly, comparing it with the *corpus cavernosum penis* s. *urethræ*, or with an ordinary sponge. " The fibrous tissue of the sponge," he continues, " corresponds with or represents the branching subdivisions of the chorion and their uniting medium derived from the decidua; the cavities and interspaces of the sponge, however, represent the passages in which the blood of the mother flows. None of the many tortuous arteries which penetrate the decidua, still dividing into branches, from the uterus, when they reach the placenta undergo any farther subdivision; they open at once into the spongy texture, and are lost as ordinary vessels. Neither do the veins show anything like division into branches; they all open like the arteries into the spongy substance of the placenta, by orifices larger or smaller. It

is only as they are running in the investing decidua that they divide into a few branches. The spaces between the branched subdivisions of the chorion are thus kept filled with blood constantly poured in by numerous and large arteries, and regularly carried off again by numerous and capacious veins, so that it is perpetually renewed.

The placentas of all animals seem referable to two grand classes: "but the nourishment of the embryo appears in every case to depend on the subdivision of the fœtal and maternal blood into innumerable currents, the fœtal blood being, however, subdivided much more minutely than that of the mother, which pass each other through a great extent of tube, and are in contact through alike or still greater extent of surface, but always, without the stream of the one interfering with that of the other, and without any admixture of the blood of the mother with that of the fœtus. These currents may, in fact, be separated from each other at every point, by parietes of extreme thinness, which, however, do not oppose all interchange of matters, these transuding or making their way through the delicate bounding membranes." Baer (*Entw.* S. 279) says, "By the growth of the vessels of the uterus into the decidua serotina, this is transformed into the placenta. That vessels pass from the walls of the uterus into the placenta is a fact long known and admitted; but in regard to the form and mode of this passage or transference, opinions still vary. It was long believed, with Hunter, that they passed into cavities. In more recent times there appeared a growing disposition to regard these spaces as enlarged veins with extremely thin walls, a structure which is assigned to them among others, and particularly by E. Weber. Very lately, however, Dr. R. Lee has very emphatically insisted, that the great veins of the uterus ended open-mouthed on the inner surface of that organ, but that these openings were closed by the substance of the tunica decidua, and that generally no other than vessels of very small calibre penetrated the decidua from the uterus.

Dr. Lee's paper, "On the Structure of the Human Placenta and its connection with the Uterus," will be found in the *Phil. Trans.* for 1832. This zealous inquirer has seen reason to alter his opinions there stated. He now admits that the maternal blood enters the cells of the placenta by the tortuous arteries in the decidua, and is returned into the uterine veins by oblique openings in this membrane.

Dr. Willis's Translation of Wagner, p. 201.

[We have given this long quotation on this interesting subject, as we think it will satisfy any one that Drs. Simpson and Radford are supported in their opinions by the anatomical structure of these parts, and if the reader will turn to p. 342 of Retrospect, Vol. XII., he will find that Dr. Simpson's views respecting the *source* of the hæmorrhage in placental cases are correct, and agree with the anatomical description of Weber and others.

It is from not clearly understanding the growth and formation

of the placenta, that some of the opponents of Dr. Simpson have been led into error; and amongst the rest, with all due deference, we are compelled to name Dr. Ashwell, who, at p. 348 of Retrospect, Vol. XII., denies the correctness of Weber's views, and those of Dr. Simpson, and says—"It is, on the contrary, easy enough to show to the satisfaction of the most incredulous, the great openings existing in the lining membrane of the uterus, exactly opposite the attachment of the placenta, and which are covered by interposed decidua. Into many of these the tip of the finger may be inserted, while their course and extensive communications with the uterine sinuses, full of blood, is evident at a glance. Surely such an organization affords the clearest proof of the source of the hæmorrhage in placenta prævia. By some unfortunate accident the placenta and the intervening decidua are detached, and as the uterus is full of blood, there is no barrier to prevent its escape; in moderate amount if the detachment be slight, but excessive in quantity if the separation is considerable, and attended with excitement and hurry of the heart's action."

This opinion, as far as it goes, is perfectly correct, as the hæmorrhage may indeed arise from these open vessels, as well as from their continuations in the substance of the placenta. Dr. A. seems to forget that the maternal vessels *do not terminate* on the internal surface of the womb, *but are continued* into the placenta. He says, a little further on, that he tried to squeeze a quantity of blood from a *detached* placenta, and could only procure two or three ounces: this may have been the case, but the *communication with the mother had been cut off*, and hence the failure of his experiment. We do not exactly agree with Dr. Simpson, that the hæmorrhage in these cases is "*venous* hæmorrhage by retrogression;" we do not see that his explanation is necessary, and if this article had not occupied so much space, we think that we could give a sufficiently simple and satisfactory explanation, without supposing that the venous blood regurgitated or retrogressed.

We would humbly suggest that, in future, hæmorrhage from the uterus be divided into two kinds: 1st, Uterine hæmorrhage, when it arises immediately from the uterine surface; and 2nd, Placental hæmorrhage, when it is derived from the uterus through the medium of the *placenta*. If these terms were adopted, we should better understand each other. We think that Dr. Simpson's explanation of "venous hæmorrhage by retrogression," is unnecessary, when we remember that the capillaries, which constitute the greater part of the maternal portion of the placenta, are what Weber calls "colossal capillaries," that is, as we suppose, as large or even larger than the regular vessels which go to and form this vascular rete. The hæmorrhage, we suspect, is from the blood of these large capillaries, which is a mixture of venous and arterial, such as has in a great measure already imparted its oxygen to the blood of the fœtus.

We suspect again, that in these placental hæmorrhages, torn arteries and torn veins on the surface of the uterus have very little

to do in the process. The blood from the mother continues to pass along the uterine arteries, which are yet uninjured, into the substance of the placenta, and down to its ruptured portion, where the blood of course finds a small or a large outlet, and continues to flow till, perhaps, the vessels are blocked up by coagula, or till the whole placenta (the medium of communication) is detached

If we turn to Retrospect, Vol. XII., p. 342, line 34, we find Dr. Simpson says: "I believe with Dr. Hamilton and others, that the discharge issues principally or entirely from the vascular openings which exist on that exposed placental surface. These placental orifices are not, like the uterine, surrounded by contractile fibres capable of constricting them; they are in free communication with the general vascular system of the mother through the medium of the maternal vascular, or cavernous system of the placenta: and the blood in that cavernous system escapes readily from the exposed venous orifices on the surface of the placenta—that being, in fact, so far, its natural and *forward* course." With this explanation we agree, and can better understand it than Dr. S.'s late expression, "venous hæmorrhage by retrogression," although probably he means the same thing in both instances.

We are aware that some very interesting remarks have recently been published by Mr. Dalrymple, Mr. Goodsir,* and others, on the construction of the placenta, but we are not satisfied that they have yet brought sufficient evidence to overturn the practical deductions of the foregoing parts of this article.

The opinions of the two Hunters on the construction of the placenta, and especially on its connection with the internal surface of the uterus, has lately been corroborated by Mr. Owen in an examination of a case furnished by Dr. Lee. Mr. Copeman gives us an interesting paper on the subject, from which we take the following. Mr. Owen says,]

"Having carefully compared the Hunterian preparations with the results of my own examinations of the gravid uterus at the full period, I now believe they *all fully bear out* Mr. Hunter's general view; viz. that the maternal blood is diffused, by means of the tortuous arteries, into the spongy cellular substance of the placenta, where it bathes the capillaries of the fœtal circulation, and is returned by the oblique decidual adventitious sinuses and channels into the orifices of the uterine veins."

Dr. Rigby, in his excellent work on Midwifery (Vol. VI. Library of Medicine) quotes largely from the Hunters, and confirms their views. He says:—"From these remarks, founded chiefly on the admirable observation of the Hunters, and repeated examinations which we have made with the greatest care and impartiality, it may be stated *with confidence*, that the placenta consists of two

* See Retrospect, Vol. xii., p. 359.

portions, – a maternal and fœtal. The maternal portion consists of a spongy cellular tissue; and also of those trunks which pass through the decidua, and which form the communication between the uterine vessels and the placental cells; the fœtal part is formed by the ramifications of the umbilical vessels: 'that each of those parts has its peculiar system of arteries and veins, and its peculiar circulation, receiving blood by its arteries, and returning it by its veins; that the circulation through these parts of the placenta differs in the following manner:—in the umbilical portion the arteries terminate in the veins by a continuity of canal; whereas in the uterine portion there are intermediate cells into which the arteries terminate, and from which the veins begin.'—*Hunter.*

In the 23d Vol. of the Medico-Chirurgical Transactions, p. 224, Mr. Bloxam gives an interesting account of a dissection of the uterus of a female who died about thirty hours after a most severe labour. From the observations he has made, he deduces the following conclusions, confirmatory of the fact of a vascular connection existing between the uterus and the placenta:—

1. That the blood enters the placenta through the short curling arteries of Hunter; and that although their size is insignificant compared with the venous system of the uterus, yet their relative number being greater, a full supply of blood is insured to the organ; whilst by the smallness of their calibre, they prevent the maternal circulation from expending its full momentum on the system of the child, under the accidental shocks, physical and mental, to which the mother is daily liable.

2. That these vessels ramify on the spongy tissue of the placenta, and are there in apposition with the extremities of the umbilical veins.

3. That it is highly probable that some of the properties of the maternal blood pass into the circulation of the fœtus by this means, and having fulfilled its functions in the fœtal economy, the residue is returned to the placenta by the umbilical artery.

4. That from the free termination of the umbilical arteries it transudes into the interstitial structure of the placenta; which is continuous with the semilunar apertures on its uterine surface.

5. That these apertures are applied to the openings on the internal surface of the uterus, and furnish the channel by which the blood, or its principles, are restored to the system of the mother,

In regarding the immense size of the apertures of the venous sinuses, one feels a degree of astonishment that hæmorrhage is not more frequent, and more fatal; but when it is remembered that the essential property of the uterine fibre, at the full term of gestation, is that of contractility, and that by the exercise of this property the orifices of the deeper-seated sinuses must be closed by the more internal layer of muscular fibres, inasmuch as these apertures are not placed on the same meridian, our surprise ceases. It is probable that, independently of this mechanical arrangement, the flow of blood from the more superficial openings may be

arrested by the formation of coagula, a process for which the flocculent structure of the decidua seems highly favourable.

Medical Gazette, May 22, 1846, *p.* 896.

[The rules recommended to be observed by Dr. Radford, of Manchester, in these placental cases, are excellent and most judicious. He says,]

The practice of first detaching the placenta ought never to be adopted unless,

1st. The danger to the woman is so great from exhaustion as to render the ordinary plan of delivery by turning the child hazardous.

2nd. Where there exists some obstacle to the extraction of the child, either from distortion in the bones of the pelvis, or tumours connected with it, or in its cavity, but connected with the soft parts.

3rd. Where the child is dead.

[We ought always to turn and extract whenever the condition of the mother will allow it, since the detachment of the placenta long before the birth of the child is almost sure to destroy it. Dr. Radford adds:]

Before we undertake either the operation of turning or that of detaching the placenta, we should duly consider what is the condition of the cervix and os uteri. It is not my intention on the present occasion to enter into a detail of those cases which must be treated on the ordinary principles of practice, but enough has already been said to show that, in my opinion, they form the great bulk.

In the Provincial Medical and Surgical Journal, Jan. 22, 1845, I made the following observation:—

"First. Then as neither delivery nor detaching the placenta ought ever to be attempted, until the cervix and the os uteri will safely allow the introduction of the hand, rest, the application of cold, but above all, the use of the plug must never be omitted in cases where they are respectively required."

During the early months of pregnancy, the increase of size is mainly confined to the body and fundus of the uterus, so that the cervix presents downwards a characteristic stem-like projection. The change of development which this part of the organ undergoes during the latter months is gradually progressive, and presents an undilated and undilatable canal of greater or less length, according to the state of pregnancy, so that it is quite impossible to know whether the placenta offers itself first, before those changes of oviform expansion are produced upon it, either as the result of a natural action, or of an abnormal change provoked by the excited contraction of the fundus and body. Then, under such an organic condition, would it be prudent, nay, would it not be rash on the part of the practitioner, and extremely dangerous to the patient, to adopt the practice of detaching the placenta?

The os and cervix uteri should invariably be dilated or dilatable when the placenta is to be detached. It ought to be already so open, or in a condition to be further opened to admit the hand safely to pass through it; there should be no contusions, no organic lesions resulting from the operation; safety should be our watchword. The hand is the only instrument by which the placenta should be detached, and, indeed, I hesitate not to state, that it cannot be safely and effectually separated by any other means. It has been asserted otherwise by a late writer, who says, that the finger, or an instrument analogous to that used by the late Dr. Hamilton, for the induction of premature labour, may be employed to effect this detachment. In those cases of unavoidable hæmorrhage which occur before the expansion of the cervix uteri, it would be quite impossible to force the finger along the cervical canal, and reach the edge of the placenta so as entirely to detach it, and in those instances which occur at the latter part of pregnancy or beginning of labour, with a rigid os uteri, or even with a dilatable state of this part, it appears to me to be out of the power of the operator with the finger alone to reach so far as the edge of the placenta. The circumference of this organ is well known when it is placed over the os uteri; its centre is not always in a direct line with the centre of the opening, but there is every variation in its position here.

But the attempt to detach the placenta with the finger appears to me to be a safe procedure, compared with the use of the metallic instrument above-mentioned to effect this detachment, when it cannot be done with the finger. Can we imagine that a piece of steel can be passed through the os uteri, and adapt itself to the surfaces of the placenta and the uterus, in all the varied relations that the former observes to the latter? Can we depend on the delicate application of these means in reference to the uterine tissue? Can we effect a complete and uniform detachment of the placenta? Can we always be certain that the placenta is placed over the os uteri, when the parts are so rigid and contracted as to render such a plan necessary? I hesitate not to declare my opinion against the safety, propriety, or practicability of such an operation.

It has been estimated from statistical calculations, that there is one death in three of mothers in cases of placenta prævia; but this average, according to my experience, is far too great, the particulars of which shall, at a future period, be laid before the profession.

Notwithstanding the alleged high rate of mortality, as the result of the ordinary treatment of placenta prævia, I have no doubt in my mind, that a most fearful preponderance of maternal and fœtal deaths will be produced, if the new plan of treatment suggested is followed.

[We think that these remarks are very judicious; there may be, however, cases in which Dr. Radford's advice could not safely be followed. For example, he says, "the os and cervix uteri should

invariably be dilated or dilatable when the placenta is to be detached,—it ought to be already so far in a condition to be further opened, *to admit the hand safely* to pass through it." We think that if this were the state of the parts, turning at once would probably be the best way to finish the case; but there are cases of imminent danger where the patient may be flooding to death, notwithstanding all measures we can adopt, and yet *the os may not be in the dilated state* described by Dr. Radford. We think that Dr. Simpson has not been understood; he says expressly, in a paper which we gave in Retrospect, Vol. XII., p. 344. "Dr. Lee seems to argue as if I recommended the artificial detachment of the placenta in *all* forms of placental presentation in which turning is at present adopted. On the contrary, I have explicitly mentioned it as a mode of treatment to be adopted when rupturing of the membranes is insufficient, and turning is either inapplicable or unusually dangerous. I believe it will be found, for instance, the proper line of practice in severe cases of unavoidable hæmorrhage complicated with an os uteri so insufficiently dilated and undilatable as not to allow with safety, of turning; in most primiparæ; in many of the cases in which placental presentations are (as very often happens) connected with premature labour and imperfect development of the cervix and os uteri; in labours supervening earlier than the seventh month; when the uterus is too contracted to allow of turning; when the pelvis or passages of the mother are organically contracted; in cases of such extreme exhaustion of the mother as forbid immediate turning or forced delivery; when the child is dead; and when it is premature and not viable.

The operation of turning and artificial delivery, in unavoidable hæmorrhage, with the os uteri imperfectly dilated, would, from these and other cases, appear to be more deadly than any operation that is deemed justifiable in the whole circle of surgery. It is more mortal even than ovariotomy.

I believe, on the other hand, that in the above and similar cases, by the introduction of a finger, or of a common sound or bougie, (such as Dr. Hamilton employed when the os uteri was still shut, and in order to separate the membranes for some inches from the cervix, in order to induce premature labour), the placenta might be readily and completely detached—the attendant bleeding in this way arrested—and the labour subsequently allowed to proceed to a natural and safe termination, if it were a head or pelvic presentation. And if the child were placed transversely a more safe and proper period could be waited for, and selected for the version of it."

The following cases, illustrative of this mode of practice, have lately been published among others.

Dr. Reid reports an interesting case. The patient, Hannah Smith, æt. twenty-three, a very weak and emaciated woman, who was advanced to about the middle of the seventh month of pregnancy. Two months before she had had profuse hæmorrhage, and the flooding had again recurred. Dr. R. observes:]

Flooding now took place, and continued for about an hour, when the placenta was expelled; *the hæmorrhage immediately ceased*, and there was no recurrence of it at any time after this.

Medical Gazette, Nov. 28, 1845, *p.* 1324.

[In a case of this kind Mr. Houghton observes:]

The placenta was not over the os, but close to its edge As the hæmorrhage continued after the discharge of the "waters," and as the os was so high up as only just to be reached, the ergot seemed indicated, and it produced a favourable progress till eleven, A.M., on the 17th, up to which time I trusted she would be delivered by the natural process, as the head descended slowly, and the hæmorrhage gradually ceased. At this time symptoms induced me to repeat my examination, when I found the placenta almost plugging up the os. This, and the other symptoms, proved that there could now be no doubt that immediate delivery was imperatively called for; but the firm (hour-glass?) contraction of the uterus on the child, offered a serious obstacle to an easy and speedy delivery; and as the hæmorrhage still continued, I determined to detach the placenta, as I proceeded with the detachment of the placenta, the hæmorrhage immediately and entirely ceased, and did not recur. Might delivery have been left to nature, after the detachment of the placenta? From subsequent reflection, I think that very probably it might; for the bleeding never rercured, and I conceive that delivery by the natural process would not have made a more serious demand upon her strength than the painful and tedious operation of turning. At the time, however, and under the urgent circumstances, I feared to leave the woman undelivered longer than I could help; as, at the time, the loss of a very small quantity of blood might have turned the scale against her.

I consider the detachment of the placenta to have been a most important step in this case, as it put a complete stop to the hæmorrhage by which life began to be threatened; and I am disposed to think that had delivery been effected in the ordinary way, and had the hæmorrhage continued, as it most probably would have done during the operation, that death might have resulted. I, for one, feel thankful to Drs. Radford and Simpson for having called our attention to the propriety of detaching the placenta; and I believe that in placental presentations, where turning would be found impracticable, or very difficult, or in which the balance is so nearly drawn as to render immediate arrest of the hæmorrhage important the detachment of the placenta will be found to be of great service.

Lancet, Jan. 24, 1846, *p.* 97.

[Mr. Tweed, jun. relates a case as follows: The patient had been in labour an hour and a half before he was called to see her; there was a profuse hæmorrhage during each pain; she was becoming very faint. He says:]

On examination per vaginam, the uterus was found high up, the os uteri dilated to about the size of a shilling, thick and rigid; passing the finger within the os, the placenta could be distinctly felt, attached immediately over it; each contraction of the uterus gave rise to a gush of blood. I immediately plugged the vagina. At the end of two hours, the plug being removed, the os uteri was found less rigid, thinner, and dilated to the size of a crown piece, each pain forcing the presenting portion of the placenta partly through; as far as the finger could reach, no adhesion of the placenta could be detected. The hæmorrhage was now much diminished; in fact, it had almost entirely ceased. Dr. Murphy, who now kindly saw the case with me, advised again the plugging of the vagina, and if hæmorrhage returned to any extent, to introduce the hand, and turn the child immediately. Two hours elapsed, at the expiration of which the plug and placenta were both expelled. No further hæmorrhage occurred; the head of the child, with one hand, partly protruded through the os uteri at each pain. I now allowed the labour to proceed naturally for about an hour; the pains then becoming rather inefficient, two doses of the secale cornutum were administered, and the birth of a still-born child took place, exactly an hour and a half after the expulsion of the placenta. The uterus contracted firmly, and the patient is doing well.

Lancet, Jan. 3, 1846, *p.* 9.

[Mr. Brown relates another case. His patient was suffering from the escape of large quantities of blood at each pain, and on examination, he found the placenta presenting, with the os uteri, the size of half a crown, and *extremely rigid.* He describes his treatment of the case as follows:]

Accordingly, without the least difficulty, I, with the forefinger of my right hand, separated the entire placenta from the uterine surface, and almost immediately the hæmorrhage ceased. The pains still continuing, and the os uteri yielding to the pressure of the placenta, the latter was protruded into the vagina; but now uterine action gradually diminished, and shortly afterwards was entirely suspended. During three hours, my patient remained quite free from pains, nor did the slightest hæmorrhage take place during that period. At the expiration of that time, finding the head presenting, and there being no obstacle to the exhibition of the ergot of rye, I administered the usual dose, and the uterus speedily resumed its wonted parturient functions. In a few minutes, a seven months' fœtus was expelled, followed by the placenta, which had been pushed by the child, in its passage, into the bottom of the sacrum. Judging from appearances, the child had been dead upwards of forty-eight hours. These are the leading facts of the case. Like the majority of my medical brethren, I have a natural objection to desert old and well-established rules of practice, for novel, and, what might be considered dangerous

innovations; but this case, being in several respects peculiarly suited for the adoption of the new plan, I considered myself justified in testing the validity of Dr. Simpson's views, and so far as one case can confirm what he has advanced, I think the preceding worthy of the attention of your numerous readers, supporting as it does those opinions.

Lancet, Dec. 27, 1845, *p.* 694.

[Mr. Goddard also gives us a case, which was about seven months advanced in pregnancy, when, on rising from bed, she was seized with severe pain, the membranes ruptured, and hæmorrhage commenced. The os uteri was undilated and rigid, and the funis presented; there was no pulsation in it. In four hours' time, Mr. Goddard observes:]

The os uteri was now more dilated and less rigid, with a considerable segment of the placenta projecting into the vagina. As, however, the uterine action was still feeble, the hæmorrhage but trifling, and the patient's spirits and strength being good, with an unblanched countenance, I determined upon a further delay. I, therefore, took my departure, with a distinct understanding that I should be apprised as soon as any emergency arose. About half-past nine o'clock p.m., I received an urgent summons to attend. On my arrival, the placenta had just been expelled, and both arms and one leg of the fœtus were protruding through the os externum. In this state of things, the obvious course was to bring down the inferior extremities, an object I was preparing to accomplish, when a violent pain came on, which suddenly effected the delivery without any alteration having occurred in the presenting position of the child. The hæmorrhage entirely ceased on the expulsion of the placenta, and the patient experienced an uninterrupted and a rapid recovery. It is almost needless to add, that the child, apparently of about seven months' growth, was dead.

Lancet, Dec. 13, 1846, *p.* 645.

[On this subject, Mr. John L. I'on says:]

Every practitioner who has had much experience in these matters will agree with me in opinion, that the unyielding state of the uterine orifice forms the essential obstacle to the immediate delivery of the patient; for we are generally summoned to these cases on the first appearance of hæmorrhage before nature has been sufficiently excited to make any effort to expel the contents of the organ. Such being the case, any measure calculated to arrest the hæmorrhage, to produce expulsatory efforts, and consequent development of the uterine orifice, must, in the best manner possible, accomplish the objects and intentions we have in view. This, then, the plug, or tampon, first proposed and adopted by M. Leroux, and subsequently so particularly insisted on by the late

Professor Davis, effects in an eminent degree; but to do this it must be applied effectually: in short, the directions so fully laid down in his work, and recently quoted by his son, Dr. J. H. Davis, in the *Lancet*, must, to ensure success, be carried out most amply and completely; unless it be employed at the time, and in the manner and form therein described, it will assuredly be attended with an unfavourable result; when so used, it can hardly fail of obtaining the end desired. It not only acts as an effectual plug to the hæmorrhage, but from its mechanical irritation, never fails to excite the uterus to action; for this alone it strongly recommends itself to the notice of the profession, and is a safer and better mode of practice than that so recently recommended by Drs. Simpson and Radford.

Ibid, Dec 13, 1845, *p* 644.

185.—*Cases of Midwifery, in which Galvanism was applied.*—By Thomas Dorrington, Esq., Surgeon to the Manchester and Salford Lying-in Hospital.—[In a paper read before the Manchester Medical Society, in February last, Mr. Dorrington called attention to this powerful agent in certain obstetrical emergencies. He considers that sufficient attention is not paid to the danger the child is exposed to in those cases of placenta prævia, where the placenta is extracted before the child, and that the old methods of rupturing the membranes, turning, and the plug, are sufficient in the majority of cases. He says,]

The separation of the placenta prævia, before delivery, is justifiable in two sets of cases only; the first is where we have satisfactory evidence of the death of the child, or what is equivalent, where organic alterations in the hard and soft parts have so lessened the diameters of the passages, as to compel us to adopt craniotomy to terminate the labour; and the second is, where the woman is so exhausted as to be unable to bear the shock of delivery, the hæmorrhage still continuing, or if not continuing, most likely to recur. It is obvious from this, that although most valuable in its proper place, the treatment alluded to can be very rarely required; whereas, the application of galvanism, which has been lost sight of in the discussion, is serviceable in a number of cases which the actively engaged obstetrician is frequently meeting with.

I may premise that the instrument used by me in the following cases, was the electro-magnetic apparatus of Messrs. Abraham and Dancer, of this town, with Dr. Radford's additional vaginal conductor.

[Mr. Dorrington then relates a case of internal hæmorrhage during labour. The pains had subsided, the os uteri was very rigid, and only the size of half a crown, and the uterus quite lax; there were all the symptoms of exhaustion from hæmorrhage, with only the escape of about a pint of blood externally. Half a drachm of laudanum was immediately given, and a bandage applied, and then

half a drachm of *secale cornutum;* in about twenty minutes the ergot began to act, and the child's head bore down on the os uteri; between the pains, however, the uterus was very lax. Dr. Radford was consulted, and it was concluded that to deliver in this case would be certain death. His plan of applying galvanism was adopted, in order to check the flooding, and thus allow an opportunity of getting nourishment into the patient. Mr. Dorrington thus speaks of the process:]

We applied one conductor of the electro-magnetic apparatus to the os uteri, and the other to the abdominal parietes over the fundus uteri. The woman immediately began to complain that we were cutting her, and the uterine action came on at once. After having used the remedy a few minutes, we desisted, and had great pleasure in finding that the tonic contraction of the uterus had been called into play. We again applied the galvanic shocks and currents, and the uterus immediately responded to the applications —strong contraction at once taking place, and the woman complaining of cutting pain. In about twenty minutes after its first application, we finally ceased to use it, so firm a state of tonic contraction having been induced that we considered it safe to leave the woman, with orders that beef-tea, broth, and eggs beaten up with milk, should be given her at intervals, and a teaspoonful of brandy in a little water, occasionally. An abdominal bandage was kept firmly applied. When we made a vaginal examination, we found the head bearing down on the os uteri, with a much greater degree of pressure than had existed before the galvanism was applied, and we left with a firm conviction that the galvanic treatment had been of most essential service in this, the first case in which Dr. Radford's new plan had been tried in the human subject.

[The flooding ceased, and in six hours and a half after galvanism was applied, labour pains set in, and in four hours afterwards, the labour was completed. This was on the 27th of September, and the next day she was very well, but sank and died on the 1st of October.

The difference in the length of time in inducing uterine contraction by ergot and galvanism is well exemplified in this case; by the former it was from twenty minutes to half an hour; by the latter it was instantaneous.

Mr. Dorrington also gives another case where galvanism was applied, in which hæmorrhage occurred *before* labour. The patient whilst stooping, suddenly lost two or more pints of blood, when she immediately fainted and vomited. Galvanic shocks were applied in the direction of both the axes of the pelvis. Mr. Dorrington observes,]

The effect on the uterine fibre was most marked, the firmest tonic contraction occurred the moment the organ was stimulated, and when the conductors were finally removed, a good tonic state of the organ existed, a fact which was proved both by its hardness to the touch when examined through the abdominal walls, and by

the head being in firm apposition with the internal surface of the os uteri. The constitutional effect upon the woman was very serviceable, for it acted as a general stimulus, rousing her up, and making her, to use her own words, "feel better than she had done for months." The pulse was 98, and stronger, and her face much less pallid. I ordered her to have an abdominal bandage put on, and to lie on her back to counteract the anterior obliquity of the uterus. About twelve, p.m., nineteen hours after the galvanism was applied, labour commenced without any further hæmorrhage having occurred, and terminated in about two hours and a half in the birth of a male child, which was living. The placenta was expelled, along with four or five coagula, as large as the closed hand, in a quarter of an hour afterwards. The woman recovered well.

[In another case, where the patient had arrived at the eighth month of pregnancy, and was suffering from the constant oozing away of blood from the uterus, the galvanic current was made use of. On examination per vaginam, Mr. Dorrington found a quantity of coagula in this canal, and he adds,]

Upon carefully removing these, I found the os uteri oval in shape, dilated to the size of a penny piece, tolerably dilatable, and almost entirely filled up by the placenta. I could just feel the membranes anteriorly, and to the left side of the uterine orifice, and I ascertained that they were unruptured, and that the head presented. There had been occasionally slight labour-pains since last night; the fœtal heart was audible just below the umbilicus. I prescribed quiet and cool regimen.

At half past one, p.m., Dr. Radford, Mr. James Kenworthy, and Mr. Runcorn, saw her in consultation with me; there was still a slight draining discharge, and the other circumstances much the same as at my visit earlier in the day. We thought the case a favourable one in which to try the experiment of delivering the child without turning, by means of the uterine action induced by galvanism, combined with artificial rupture of the membranes. At a quarter to two, p.m., we applied the galvanic conductors in the usual way, and good strong uterine action set in at once. In about ten minutes I ruptured the membranes with Holmes's stilette, and we continued the use of the galvanism till twenty minutes past two, p.m., by which time the pains began to come on spontaneously at intervals, and the placenta had fallen down to a considerable extent into the vagina; the hæmorrhage was extremely slight. At three, p.m., we left her, the labour-pains being good and regular, and the fœtal heart still audible. We ordered her to lie on her back, with a little inclination towards the left side, as there was right anterior obliquity of the uterus, and the child's head was a little too much inclined to the left side, and too far forward over the pubes.

At five, p.m., Dr. Radford and myself returned, and found that very little change had taken place since we left. The uterine

action was not so strong as it had been two hours before, and there was no hæmorrhage. We re-applied the galvanism, using a greater power, and Dr. Radford carefully dragged the os uteri into the axis of the vagina, for we thought that the obliquity of the organ prevented the head from entering the pelvis. In an hour there was a decided advance; the head had descended into the brim of the pelvis, and was dilating the os uteri rapidly, and there had been no further flooding. The placenta continued to descend more and more as the labour progressed, preceding the head for some time, and, indeed, when the child, which was a female, was born, its most depending portion was protruded from the os externum before the head; so that the child passed over the half-detached placenta along the vagina. Of course, as so great a separation of the afterbirth had occurred, the child was born dead, though the fœtal heart was audible till half an hour before its birth. The placenta came away immediately after the child, the labour being entirely terminated at twenty-five minutes to seven, p.m. The woman recovered rapidly and without a bad symptom.

This case, so far as the life of the child was concerned, would probably have terminated in the same way under any plan of treatment, since the placenta would doubtless in any case have become detached to a great extent from the uterus before its birth.

[We cannot quite agree with Mr. Dorrington in this opinion; we think there was nothing in this case to prevent the hand being introduced and turning accomplished before the death of the child. We give the case chiefly to show the effects of galvanism, but we should be very cautious how, under such circumstances, we delayed delivery when the os uteri was sufficiently dilated or dilatable to allow of active interference. Both this practice, and that of extracting the placenta, may evidently be liable to abuse, while the life of the child will be sacrificed.]

Provincial Medical and Surgical Journal, March 11, 1846, *p* 105.

[In a case of twins, the first child was expelled by the uterine efforts in four hours after labour set in. The uterus was inert afterwards, and in four hours Mr. Dorrington saw the case. He says,]

I considered it a good opportunity to ascertain the value of Dr. Radford's galvanic plan in renewing uterine action, so I made the necessary arrangements. In about an hour, Dr. Radford and myself, in the presence of my friend, Mr. Nursaw, and my pupil, Mr. William Black, proceeded to apply the remedy. The effect was immediate; strong labour-pains coming on, and continuing whilst the galvanic circle was complete. The woman cried out that she had pain similar to what she supposed might be produced by "forks being thrust into her belly." On examining, *per vaginam*, the membranes were found to be tense and protruding into the passage, and the os uteri was fully dilated. After the galvanic circle was broken, and the intervallic contraction thereby induced

had gone off, it was remarkable to observe that so great a degree of tonic uterine action existed, that the amniotic bag could no longer collapse, but remained tense in the vagina, as it does at the height of a pain in normal labour. In the course of about half an hour the intervallic uterine action was so completely excited that we ceased to apply the galvanism; and, during a pain, Dr. Radford ruptured the membranes, when the foot was found presenting. I now took charge of the case, and in about a quarter of an hour, with the assistance of slight traction, a very small female child was born alive. We applied a few slight galvanic shocks to its chest, as the respiration was feeble, with a very good effect. The placenta, which was single, came away in about twenty minutes, with less discharge than is usual in twin cases.

The mother recovered well and rapidly; but the second child, which was extremely puny at birth, died of convulsions in four or five days.

This case would probably have terminated by using the ordinary means, viz., abdominal friction and pressure, artificial rupture of the membranes, or the use of the ergot. It was, however, thought to be a favourable opportunity of testing the power of galvanism in cases of uterine inertia, Dr. Radford having suggested its use in similar cases in his lecture. It answered perfectly, but I should not myself have recourse to it again in such cases, till I had tried milder methods, because it is unquestionably very disagreeable and painful to the patient. I am of opinion that, under most circumstances, the ergot should be tried in uterine inertia in preference to galvanism, but where the os uteri and soft parts are rigid, or where the circulation in the child is feeble, as indicated by auscultation, the latter is to be preferred: and for this reason, that you can perfectly regulate its effects, whilst you cannot those of the ergot. Of course, in many cases, abdominal frictions and pressure, and the artificial rupture of the membranes, where the os uteri is in a state to justify it, are sufficient to induce uterine action, without the use either of ergot or galvanism.

[Mr. Dorrington also relates a case in which he made use of galvanism for the induction of *premature labour*. In consequence of a contracted pelvis, it was considered advisable not to allow the patient to go on to the full term of gestation. A sponge tent was first introduced, but as it did not answer, Mr. Dorrington proceeded to pass a galvanic current through the uterus, in the presence of several medical gentlemen; the uterus became hard and pain was induced, which lasted only during the application; but Mr. Dorrington states that:]

In about eight hours and a half after the use of this agent, the membranes ruptured, little or no dilatation of the os uteri having occurred.

April 3rd. About forty-eight hours after the application of the galvanism, I made a vaginal examination, but there was no dilatation of the os uteri. On making an abdominal exploration, I dis-

covered the head of the child at the fundus uteri. In about three hours after I saw her, labour came on, and the child presented with the breech. The case went on well so far as regards the action of the uterus. but the child was born dead after a labour of about nine hours' duration. Mrs. Mills, an experienced midwife, who had charge of the case, informed me that she examined the funis as soon as it came within reach, but she could detect no pulsation in it. I examined the infant and found the face purple from congestion, and the nates and scrotum much ecchymosed. The placenta came away in an hour after the birth of the child.

The woman suffered from a severe attack of menorrhagia about twelve days after the birth of the child, which yielded to ordinary treatment, and the use of the plug.

The results of the application of galvanism in this case were more unsatisfactory than in any of the others. Indeed, I do not think that it induced labour *directly*, after all. This was the direct consequence of the rupture of the membranes, which, however, was doubtless caused by the tonic contraction of the uterus induced by the galvanism,—I say tonic contraction, because she experienced no pain previous to the discharge of the liquor amnii,—so that, probably, had the membranes been strong enough to resist the pressure to which they were subjected, and this might easily have been the case, sufficient uterine action would not have been excited by galvanism to establish labour. The galvanism failed too, in the object for which it was chosen, viz., the induction of labour, so gradually and in so similar a manner to that in which it comes on spontaneously, that the membranes might remain unruptured until full, or, at any rate, considerable dilatation of the os uteri had taken place. We must admit that the ordinary method of bringing on premature labour by rupturing the membranes is open to objection, on the score of the difficulties which an early discharge of the liquor amnii may cause if the presentation is præternatural; and that such is more likely to be the case in a premature than in an ordinary labour Dr. Merriman has satisfactorily shown. The use of the sponge tent and galvanism were both supposed by Dr. Radford and myself to offer the chance of avoiding the accident above alluded to, but so far as this case is concerned our expectations were not fulfilled. If further experience should afford more satisfactory results in this particular, galvanism will have a decided advantage in these cases over the old method; but should it not do so, I should prefer the artificial rupture of the membranes both on account of its greater simplicity and its perfect freedom from pain or distress to the patient.

Of course, after so few trials as have yet been made with galvanism in the practice of midwifery, it is very difficult to form an opinion as to its exact value, and the particular cases in which it is likely to supersede means that have been previously adopted. That it is a very powerful remedy there can be no doubt in the minds of those who have seen it tried, and that the uterus will respond to its application, whilst the general system is completely prostrated, is

equally certain. This latter circumstance is one of its peculiar merits, as I believe there is no other means by which we excite uterine contraction that is not liable to fail when severe hæmorrhage has weakened the vital powers. But the pain and disagreeable sensations produced by the galvanic shocks and currents when passed through the uterus, are such as one would not wish to subject a patient to unnecessarily, and this is one of its disadvantages. For this reason I think that we are bound to try other means before having recourse to it, excepting such circumstances exist as render it hazardous to the mother or child to lose any time. Thus, supposing we have a case of uterine inertia, we should try frictions, pressure, and cold to the abdomen, rupturing the membranes if justifiable, and even the ergot in most cases before having recourse to galvanism. But if we should have uterine inertia, complicated with funis presentation, the funis pulsating well, and the passages in a favourable state, a case by no means uncommon, we should lose no time in applying galvanism, inasmuch as the only chance for the child consists in a rapid delivery, which indeed might still require the forceps for its accomplishment. I believe it to be a perfectly safe remedy, since I have never seen any thing to lead me to suppose that either the mother or child have suffered from its use.

From the little I have seen my opinion is that it is a most valuable means in that class of cases for which Dr. Radford first recommended it, viz., uterine hæmorrhage before, during, and after, labour in the latter months of pregnancy; and it must always be remembered that its application need not, in any way, lead us to neglect the ordinary methods of treating these cases, if there is any reason for giving them a previous trial. Of course from this statement must be excepted the old plan of delivering the child where great exhaustion of the mother is present, to supersede which practice galvanism was specially brought forward.

Provincial Medical and Surgical Journal, March 18, 1846, *p.* 117.

186.—*Galvanism in a Case of accidental Hæmorrhage.*—By Thos. Radford, M.D., Consulting Physician to the Manchester Lying-in Hospital.—[This patient was eight months advanced in pregnancy when she received a fright which was followed by a copious discharge of blood from the uterus. On Dr. R's arrival the os uteri was rigid and closed, and the hæmorrhage profuse, which could not be arrested under the ordinary means. The uterus was flaccid and inactive, which, in Dr. Radford's opinion prevented the application of the plug. He at once determined upon rupturing the membranes, which he did with a small catheter and applied friction to the abdomen, which, however, failed in producing uterine action, cold applications were made, but the hæmorrhage still contined, and delivery could not be proceeded with as the os uteri still remained rigid and closed. Dr. Radford adds,]

Under these circumstances I determined on the application of galvanism, and therefore sent for my apparatus. When it had

arrived and was made ready for use, the lever regulating the intensity of power was placed at the middle point. I now passed the vaginal conductor to the anterior edge of the os uteri—having first placed the other over the fundus, and which was held by an assistant. The circle was now completed, and the patient immediately complained that I was cutting her. The abdominal conductor was removed and reapplied on different parts of the fundus; and so also was the vaginal one changed so as to act through every part, as far as possible of the long axis of the uterus. From the moment that the circle was complete, uterine pain was excited; and a bearing-down effort was produced. These effects were observed to be more or less intense according to the length of time the conductors were allowed to remain applied. The uterus was felt to be tonically contracted during the intervals, and this effect was observed to be increased after each temporary action induced by the application of the connection rod.

This plan was continued at intervals for half an hour. I now withdrew the vaginal conductor, and placed a common conductor externally on each side of the uterus, so as to pass the galvanic current in a transverse and oblique direction. In doing so I moved them from the upper to the lower part of the organ, taking care to have each placed in such a manner that every portion of the uterine tissue (as far as possible) was subjected to the influence of this remedy.

From the time that the uterus began to contract the flooding abated, and soon altogether ceased. The os uteri also began to soften, and gradually yielded, so that at the end of six hours it was so far dilated as to allow the head of the child to pass through it. The child was born alive. The placenta was also expelled without further assistance. There was no further flooding. The uterus was found firmly contracted.

Remarks.—The power of galvanism to excite the uterine fibre to contract was admirably shewn in the foregoing case. It not only originated the temporary contraction of the uterus, but also produced such a lasting impression upon this organ, that the pains continued to occur (if any way different from those which accompany its normal action in being more energetic), until the labour was completed. The value of the tonic contraction of the uterus in arresting bleeding is well known to the practical obstetrician; and, as I have elsewhere observed, this favourable condition of the organ is increased in degree after each application of the galvanism.

When we employ this agent we should take care not to continue it too long, but interrupt the connection, so as to allow the uterus intervals of rest, and thus, as nearly as possible to imitate nature's operations.

It sometimes happens that our usual means fail to produce the effect we desire; and although cases of this kind are exceptions, yet they are sufficiently numerous, and also of such a dangerous character, as to demand, on the part of the obstetrician, an inquiry whether some other plan can be adopted to place the patients in a

state of safety. The truth of the above statement, in cases of accidental hæmorrhage, is proved by the great discrepancy in the opinions of different writers as to the proper treatment to be adopted. One class recommend the membranes to be ruptured according to Puza's plan, and they assert that reliance may invariably be placed on this practice as an infallible means of arresting the discharge.

Another class recommend delivery (as a primary operation) as soon as it can be safely performed. They think that rupturing the membranes will frequently fail to fulfil the indications intended; and that afterwards, when the relative local condition of the patient is unfavourably altered, it will become necessary to turn and extract the child, and thus render the operation more dangerous to the patient, and more difficult to the operator. The different views entertained by these writers (all of whom are men of the highest reputation) upon a subject of such vital importance, clearly prove that sometimes the one plan and sometimes the other may be advantageously adopted. My experience tends to corroborate this conclusion, and I am of opinion that rupturing the membranes will not invariably succeed in arresting the bleeding, and indeed the case above detailed is an example of the truth of this assertion. In the course of my practice I have met with many others where I have been disappointed in the results, and have been compelled to have recourse to delivery. It is, then, in such instances as these, that we can with such certainty of success bring into use this most powerful agent—galvanism, to supersede the necessity of proceeding to undertake an operation which, when ultimately undertaken, is always attended with more or less danger to the patient, and of difficulty to the operator.

There is also a contingent organic rigidity of the os, and an undeveloped state of the cervix uteri, which renders delivery either impossible or dangerous, or at least very hazardous. We meet with cases in which it is quite impossible to introduce two or three fingers through the os uteri without lacerating this part, and if the hand is forced through, however cautiously done, the mischief must be considerably increased; but the danger does not end here; for when the child is turned, and its more bulky parts brought rapidly (as too frequently done) to pass through this opening, contusion and laceration to a greater or less extent must inevitably occur.

Are we warranted, then, to incur the risks of delivery, in such cases, in order to conform to preconceived notions, or at most only obtain an apparent immediate advantage? Do we not possess other remedial means capable of placing our patient in a state of security until the parts assume a more favourable condition for delivery? Most certainly we do—the plug in some cases, and galvanism in others.

There is a dogma extant amongst writers and practitioners, which has a baneful tendency if followed, and leads to disappointment to the practitioner and danger to the patient. This I have adverted to in my lecture on galvanism, and in the following words:—I now refer particularly to that assertion of certain writers,

who say, that by the evacuation of blood, the soft parts become so weakened and dilatable, that delivery can always be accomplished. .....The os uteri will continue *undilatable*, although the woman may be in such a state of exhaustion as to be literally tottering on the brink of the grave! It is true that this state of matters does not generally exist, but it is too frequent to be overlooked in determining our line of practice,"—*Prov. Med. and Surg. Journal.*

If these remarks wanted further corroboration than my own practice furnishes, I have the opportunity of bringing forward the testimony of one of the most worthy and practical obstetricians of our time, whose virtues stand acknowledged, and whose practical experience is unrivalled: I mean Dr. Merriman. This opinion was conveyed to me in a private letter, after he had read my lecture.

[With due deference to Dr. Radford, we think that the use of the plug in such a case as this ought not to be dispensed with. We cannot agree in the opinion that because the uterus "felt flaccid to the hand when placed over it," the plug could not safely be used for fear of the blood *accumulating internally:* we consider this to be an erroneous doctrine: after the rupturing of the membranes and the evacuation of the liquor amnii, the plug ought to have been *effectually* introduced; and a small portion of rag might have been pushed a little way into the os uteri, or, at any rate it might have been so placed as to effectually plug it, and to be kept in its place by successive portions of rag till the vagina was filled. Although we think that galvanism may be useful in many of these cases (for which reason we have given full reports of most of the cases of this kind) yet we should not like to depend upon it when we have such a very safe and effectual remedy as the plug, when judiciously used.]

Medical Gazette, Jan. 2, 1846, *p.* 19.

187.—*Case of Uterine Hæmorrhage, in which Galvanism was employed.*—By Henry Wilson, Esq., Surgeon, Runcorn.—[Mr. Wilson's patient was two months advanced in her pregnancy, when hæmorrhage from the uterus took place. When Mr. Wilson saw her she was quite blanched, with small weak pulse, he ordered gallic acid and cinnamon powder to be given every two hours, applied cold to the pubes and thighs, and a bandage round the abdomen; the room to be kept quiet and cool; a sanguineous oozing, however, was constantly going forwards, and in about ten hours, a large quantity of blood escaped, followed by syncope and convulsions; the pulse became imperceptible, and the extremities cold. She was roused by stimulants, and on examination the os uteri was found open and soft. Mr. Wilson observes:]

I now proceeded to inject the vagina with half a pint of cold water, and repeated the same process by rectum. The vagina was then plugged with a soft cambric handkerchief, and a full dose of ergot, with twenty minims of diluted sulphuric acid given. This

dose was repeated at intervals of fifteen minutes, until six doses were taken, equivalent to three drachms of the ergot; in the meantime ammonia and brandy were almost constantly required to avert syncope. During three hours that I remained with my patient, her life appeared to depend on the assiduous administration of stimuli.

Having left the house for a short time, I found, on my return, that the *tampon* had been expelled, accompanied by a large quantity of blood and coagula; I decided not to reintroduce it, that I might repeat the injections of cold water. During the succeeding two hours these were administered several times, and they seemed, on each occasion, to check the discharge for a few minutes, but the vagina soon became hot again, and the discharge re-appeared.

The case now appeared to be utterly hopeless. She could no longer swallow the brandy, and was only roused from a state of apparent insensibility, bordering on syncope, by the scarcely interrupted application of ammonia to the nares. The pulse had almost forsaken the wrist, being doubtfully perceptible; the eyes remained rigidly open and fixed; in short, death seemed imminent. As a *dernier* resort, with but faint hopes of doing any good, I resolved to try galvanism, as suggested by Dr. Radford.

My residence being within a very short distance, I was enabled, in a few minutes, to have the apparatus in action at my patient's bed-side. A copper wire, coated with thread and sealing wax, with a ball of moistened sponge, about the size of a nut, fastened to one end of it, served for a vaginal conductor. The sponge was passed within the os uteri, and there retained. I previously ascertained that shocks could not be elicited from any part of the wire except from the sponge, at its extremity. The conductor from the other pole of the apparatus was then applied over various points of the sacrum and loins, and shocks, and continuous currents of the galvanic fluid transmitted through the parts intervening between these points and the sponge at the os uteri. Ten minutes elapsed ere the patient appeared sensible of the galvanic agency. The first indication of this was observed in her countenance, her glassy, corpse-like eye, brightening up with something of its wonted expression. In the course of ten minutes more, the pulse was more distinctly perceptible, and she complained of pain in the abdomen. After continuing the galvanic influence for a few minutes longer, the apparatus was withdrawn.

[The following day found her still free from hæmorrhage, but she voided with the urine a fleshy substance, about the size of a fig.]

Provincial Medical and Surgical Journal, April 29, 1846, *p.* 194.

188.—*Electro-Magnetism in lingering Labour from Uterine Inertia.*—By Mr. Clarke.—[At a meeting of the Obstetrical Society of Dublin, in January last,]

Mr. Clarke gave the detail of two cases in which he employed the induced electro-magnetic current with perfect success, in the Rotunda Lying-in Hospital of this city, in February, 1845, in one of which the membranes had been ruptured forty-nine hours, and in the other the labour had lasted sixty hours, and in each case the child as well as the mother, did well. Mr. Clarke also remarked that although this agent had been previously employed in uterine hæmorrhage by Dr. Radford, of Manchester, yet that he believed that these were the first cases in which it had accomplished parturition. And after describing the method which he deems fittest for the application of the power, namely, from over the sacral plexus of nerves to the recto vaginal septum, as near the os uteri as can be done without passing the current through the head of the infant (the vaginal director being coated with sealing wax varnish, except at its external ball): he described some experiments made upon the lower animals, by means of which he proved the superiority of galvanism beyond electro-magnetism in exciting the action of the heart and vermicular motion of the intestines, after both these functions had ceased from asphyxia.

Dublin Hospital Gazette, March 1, 1845, *p.* 216.

189.—*On Opium in Hæmorrhage.*—By Dr. GRIFFIN.—Of all the wonderful influences exerted by opium, that by which it sustains the powers of life when sinking from hæmorrhage, and arrests the flow of blood, is the most extraordinary. When after severe uterine hæmorrhage the countenance is sunk, the eye hollow and glassy, the lips blanched, the skin cold, and the whole person corpse-like, when the pulse is almost gone at the wrist, when the beat even of the heart is scarcely perceptible, and stimulants, even brandy or rectified spirits, are either vomited or uninfluential, there remains yet one remedy capable of restoring the patient to life, and that is opium. I believe its power of saving life in these circumstances depends principally on its specific property of producing congestion in the brain. That amount of congestion by which it occasions apoplexy when given in large doses to persons in health, seems only sufficient to sustain the natural and necessary tension of the cerebral vessels in those who are dying of hæmorrhage. Persons die in cases of hæmorrhage, not so much from mere debility of the heart's action, as from the loss of nervous power in the brain consequent to it, and hence a fainting from which they are never awakened. The opium in such cases not only stimulates the heart's action, but restores a sufficient degree of tension in the vessels of the brain to prevent faintness, and by the judicious repetition of the remedy, life is preserved on the very borders of death. There are no instances in which opium can be given so freely or so fearlessly as in these. When the danger is imminent, five grains may may be given at the first dose, and two or three every hour or half hour afterwards, until the pulse becomes distinct, the breathing easier, and the tossing or flinging about in the

bed is allayed. It is hardly necessary to observe, that in such cases, in conjunction with the use of opium, the administration of warm wine and brandy, (however inefficient alone), and the application of heat to the extremities, are highly useful, if not absolutely essential.

British and Foreign Medical Review, Jan. 1846, *p.* 107.

190.—*On the Treatment of Uterine Hemorrhage after Delivery.* —By Dr. Beatty.—[At a meeting of the Obstetrical Society of Dublin, Dr. Beatty read a paper on the use of ergot of rye as a means of preventing uterine hæmorrhage, more especially in those cases where, from previous experience, there is reason to expect hæmorrhage after delivery.]

The mode he adopts is the following. He prepares an infusion of one drachm of ergot in four ounces of boiling water, and when the child's head has just cleared the external orifice, he gives one-half of the dose, including the powder, and when the child is entirely expelled, the remainder is given. Dr. Beatty gave the details of several cases, in which this practice was followed by complete success. The placenta was thrown off in all without any difficulty, and in none did the slightest hæmorrhage appear, although in former labours the greatest danger to life had been experienced.

[Dr. Beatty also spoke of the power of ergot in allaying after-pains, and also of its effects in menorrhagia, when given in doses of five grains, two or three times a day.]

Dublin Hospital Gazette, March 1, 1846, *p.* 216.

191.—*Ergotine in Uterine Hemorrhage*—By Dr. Ebers, of Breslaw.—[Dr. Ebers has met with considerable success in the treatment of uterine hæmorrhage, by ergotine. He gave it to a patient who was labouring under profuse hæmorrhage, in consequence of destruction of the substance of the uterus by malignant disease. The bleeding was arrested after a few doses; the ordinary remedies had previously failed. In another case, where the hæmorrhage was very profuse, large quantities of dark fluid blood passing away mixed with large clots, it proved very successful. Dr. E. observes on this case:]

Under such circumstances, I prescribed the ergotine in two-grain doses every two hours: twelve doses had scarcely been taken before the hæmorrhage completely ceased, so much so that not a trace of blood could be detected in the urine. The sequel was still more important. The patient rapidly recovered, in ten days was able to leave her bed, complaining only of the sense of weight in the spleen, and in a fortnight, though still weak, was able to return to her domestic duties after twenty-eight days; the catamenia returned at their proper time, and lasted for eight days, the patient, during their continuance, experiencing no other unpleasant symptom than uneasiness in her spleen.

[From these cases alone we can scarcely draw very positive inferences, as to the dependence to be placed on this remedy, yet it must be allowed that the ergot possesses powerful curative properties, and also that the ergotine appears to be free from the pernicious effects of secale itself. Dr. E. remarks:]

It is easy to suppose that injurious effects might readily result from the employment of a remedy which exerts so powerful an effect on the contraction of the vessels, or possibly on the condition of the blood itself. It will be by no means right, therefore, suddenly and indiscriminately to check hæmorrhages of all kinds, and it may be a question whether ergotine is admissible in cases of the so-called active hæmorrhages, which certainly are rare, or in hæmorrhoidal bleedings, as in every case of hæmoptysis, there is certainly need of much caution in the free and general employment of this remedy. On the other hand, it is highly important both for medicine and surgery, that so powerful and valuable a remedy should be generally adopted.

The chief and most important effects of ergotine, as before stated, are observed in cases of uterine hæmorrhage, whether chronic or acute, whether dependent upon a dynamic or an organic cause, and in but one case have I had to doubt its efficacy, and that was where the hæmorrhage occurred in a young unmarried female, and was the result of injury.

[The first case here alluded to by Dr. Ebers was a woman, seventy-two years of age; the hæmorrhage, as might be expected from the nature of her disease constantly recurring, but was invariably arrested by a few three-grain doses of ergotine. Of course, it cannot be expected that the ergotine can cure these unfortunate cases, but by its aid, certainly one of the most formidable of the symptoms can be alleviated. Dr. E. observes that it is always ready in the wards of All Saints' Hospital, for the cure of patients affected with malignant uterine disease, and that in some cases it has been given to the extent of half a drachm daily.]

Medical Gazette, Jan. 9, 1846, p. 55

192.—*On the Treatment of Uterine Hæmorrhage after Delivery.*—By Geo. Harvey, Esq., Essex.—[In a communication in the *Medical Gazette* for January 30th, 1846, Mr. Harvey describes a very simple, and no doubt effectual mode of arresting uterine hæmorrhage after delivery; it has an advantage over the pad invented by Mr. Pretty, inasmuch as it is always at hand, not requiring to be carried about in the pocket. Mr. Harvey writes as follows:]

Suppose, for instance, hæmorrhage to an alarming extent occurs immediately after the expulsion of the placenta, I instantly turn the patient on her back, and grasp the uterus firmly with my hand, through the abdominal parietes, till I feel it contracting. Then take a small bowl or basin capable of containing twelve or fourteen ounces, and having a thick, smooth edge; this basin I invert over the body of the compressed uterus, taking care that the

whole of it is compressed within the cavity of the basin. I now confine it steadily by a towel folded lengthwise, and passed under the hips of the patient, from right to left; then brought up over the basin, and secured by three or four strong pins. Or in lieu of the towel, two strong silk handkerchiefs may be used in the following manner:—Let each handkerchief be folded, separately, as a man folds his neckcloth; fasten them together at one end by a reef-knot, allowing the other two ends to remain free; pass the reef-knot under the hips of the patient, from right to left; bring it over the basin, which should be firmly pressed down by an assistant. Now take one of the free ends, and pass it through the loop, or bight, as a sailor would term it, formed by the reef-knot; draw it firmly down, and with the other free end tie a slip-knot exactly as the tapes are tied round the splints for securing a fractured limb. Thus confined, it is impossible the uterus can be again distended, and any further hæmorrhage must appear externally. Perhaps it will be as well to place a thin, soft napkin, or allow the patient's under-garment to remain between the surface of the abdomen and the basin, to prevent the possibility of its acting as a cupping-glass.

Medical Gazette, Jan. 30, 1846, *p.* 219.

193.—*On the Treatment of Uterine Hæmorrhage after Delivery.*—By J. R. Pretty, Esq.—[When other means have failed to arrest hæmorrhage after delivery, the use of firm but well regulated pressure on the abdomen has very often succeeded. A book or other pad substance has been placed on the abdomen, and kept in place by means of a tourniquet. Mr. Pretty has contrived a bandage and pads, which appear very capable of effecting the object in view; he describes the apparatus thus:]

It consists of three pads, the central one being the largest; the lateral ones are thicker and narrower, and fold over the central one when not required for use, and these can be carried separately from the belt, &c., and when together are not larger than a small book. The belt is of webbing about three inches wide, and is fastened by a buckle and strap. It has attached to it Mr. Coxeter's improved tourniquet, the screw of which is only one half the length of the one on the old principle, and yet it raises as much web, so that this is easily carried. The application is very simple; you merely adjust the pads, pass the belt under the woman, and fasten it on the right side as tightly as possible, and then give the tourniquet screw one or two turns. You thus have a most powerful grasping pressure at your command, from which the uterus will not slip; the pressure is at the same time made as diffused and equable as possible, and to accomplish the latter point, I had one at first made larger than that which I have spoken of, but found that it was unnecessarily large. The lateral pads quite do away with the necessity of a broad bandage, as the use of the latter would be to afford support in front, which it fails to do; and the advantages of a narrow one are these,—it is more portable, it is more easily

passed under the patient and fastened, and it presses behind only on bony structures, and not, as the broad one, half upon these and half upon the yielding soft parts above them. The lateral pads can be made pockets, with the metal plate behind, and to be filled with soft materials when required for use, as old linen, or they might be made air cushions, to be inflated when required for use, though it is doubtful if these last would thus answer. The stuffed ones are not at all too large to be easily carried in the pocket, and no one, save a very fastidious person (which an accoucheur is not likely to be) could object to carry them. However persons may differ from me in the views I entertain, I do hope that it will not prevent a fair trial of this apparatus; and, I believe the only differences that can exist would be theoretical ones, as I feel convinced that these pads, &c., will be found equal to arrest violent flooding or the draining succeeding this, immediately, and that pressure thus applied, will in time, be considered the most safe and effectual means that we have at our command.

The belt, pads, &c., can be seen at Mr. Coxeter's, Grafton Street, University College.

Medical Gazette, Jan. 16, 1846, *p.* 117.

194.—*Case of Transfusion.*—By Robert Brown, Esq.—[Mr. Brown relates a case of transfusion which he performed in November, 1837. His patient, who had been subject to epilepsy, was suddenly attacked, during labour, with most alarming prostration. The child's head was opened and delivery speedily effected, but she did not rally; the lochial discharge was not more than usual. Stimulants were given, and friction along the spine made use of, with other means likely to restore her, but without effect. Mr. Brown then recommended transfusion, although he very much doubted its efficacy. He describes the operation and its effects as follows:]

Maw's instrument was the one employed; the central cup, designed to hold the blood, was surrounded by hot water, intentionally made two degrees above the temperature of the fluid. I took from the woman about ℥iv., which were received in the prepared vessel and in the quickest manner I could, whilst my assistant was engaged in receiving the blood into the apparatus, I punctured the right basilic vein of the patient, and most readily (after sending a stream of blood through the instrument, to expel the atmospheric air which it contained) passed the extremity of the tube into the vein. The piston was slowly worked: after its second movement the patient expressed that she could feel the transfused blood "go along her arm into the heart, and quite warm it." Before I had injected the remainder of the blood, she gradually improved both in colour and in warmth, and avowed her delight that I was no longer of a "green colour but quite right."

Her subsequent recovery took place without any untoward symptoms.

Northern Journal of Medicine, Dec., 1845, *p.* 394.

195.—*On Thirty-four Cases of Placental Presentation.*—By J. C. W. Lever, M.D., Lecturer on Midwifery at Guy's Hospital, &c.—[In the *Medical Gazette* Dr. Lever publishes a table of thirty-four cases of placental presentation, in which he notices the exact nature of the presentation, the practice adopted, and its result as far as the mother was concerned. In some remarks on these cases, Dr. Lever observes that,]

By referring to the table, it will be seen that only two of the thirty-four women were primiparæ.

In 5	women it was	the 2nd	confinement.
3	"	3rd	"
4	"	4th	"
5	"	5th	"
4	"	7th	"
3	"	8th	"
3	"	9th	"
1	"	10th	"
2	"	11th	"
2	"	16th	"

Two women are stated to have arrived at the full period of utero-gestation, twelve to have been delivered between the eighth and ninth months of pregnancy, and seventeen at the eighth month and under.

In fifteen cases the presentation of the placenta is marked "complete;" in eighteen it is stated to have been situated partially" over the os uteri; in the case marked "not known," I believe it to have been complete, but the placenta was removed piecemeal by the midwife before I was called to the case.

Mode of Delivery. — In two cases of partial presentation, the membranes are ruptured, and delivery completed by the natural efforts. In thirty, the operation of version was performed; in one of them, the head of the child could not be extracted until its size had been lessened by the perforator: a similar operation had been practised in her previous confinement (the first). In but one case was the placental mass perforated by the hand of the operator.

In one case (34) the patient had lost a considerable quantity of blood, being attended by a midwife who had removed the placenta "piecemeal;" the divided funis protruded through the external parts. After administering stimulants, and waiting for some time until the patient had rallied, I delivered her by means of the crotchet.

To case 33 I was called, and found the patient sinking, with no pulse at the wrist, and the heart's action scarcely to be felt. At 3 in the morning of the day I visited her, she had had her eighth attack of bleeding; these losses having occurred in the course of five weeks. The presentation had not been discovered, and blood was still trickling from the vagina. Brandy and ammonia were given by mouth, and brandy in gruel injected "per anum." The hand was readily admitted into the vagina, which was very re-

laxed, and a considerable portion of the placenta was found detached and protruding through the os uteri; its remaining attachment was separated, and the mass removed; there was no pulsation of the funis. The bleeding immediately ceased, and did not recur until her death, which shortly took place. This was a case in which the efficacy of transfusion might have been tried, but not knowing the nature of the case when I left home, I was unprovided with the necessary instruments.

One of the cases was delivered by Dr. Ashwell, two by my late colleague, Mr. Tweedie, three by pupils attached to the Lying-in Institution of Guy's Hospital, three by surgeons in practice, and the remainder by myself.

Thirty-three children were delivered; eighteen born alive, and fifteen dead. Of the eighteen born alive, nine were males, and nine females. Of the fifteen still-born children, twelve were males, and three females; so that twenty-one children were males, and twelve females.

Eight deaths occurred; of these, three deserve especial notice. In one, (Case 18), the woman died with pericarditis, having, in the absence of her nurse, risen from her bed a few days after her delivery, and walked down stairs to open the street door. In Case 30, peritonitis took place on the third day, and proved fatal on the fifth day. In case 32, the patient died on the ninth day, of phlebitis, having been exposed to contagion. These causes of death might have prevailed if the labours had been perfectly natural. Case 33 died with the child in utero, a short time after the removal of the placenta. In four cases death took place soon after the performance of the operation of version; Case 3 in seven hours, transfusion having been unsuccessfully performed; Case 12, immediately after delivery: this woman had had previously two copious losses of blood, without sending for assistance; Case 19, in one hour after delivery: her powers were previously reduced by gin-drinking and a want of food; and Case 24, a weakly woman, who had born ten children, and was most destitute.

I have seen three other fatal cases of placental presentation, in which version was performed, but I am unable to obtain the necessary particulars. In one, the woman died while the operator's arm was in the uterus; in the second, the patient expired in three quarters of an hour after delivery, hæmorrhage continuing after the extraction of the child and secundines, with the uterus well contracted. Although no post-mortem examination took place, I am inclined to believe the os uteri was lacerated by the hand of the operator, and in the third case the patient died immediately after the delivery of the child, before the expulsion of the placenta.

The first fourteen cases have been recorded in the Septennial Report of the Guy's Hospital Lying-in Charity, published in the Sixth Volume of the Reports, but at p. 66, line 19, there is an error, which I will take this opportunity of correcting. The paragraph runs, "in all, delivery was accomplished by the operation of

turning," it should be, "in all, *with the exception of one*, delivery was accomplished by the operation of turning."

Medical Gazette, Dec. 12, 1845, *p.* 1424.

196.—*On Head Presentations, with the Forehead originally directed forwards or towards the Os Pubis.*—By J. Y. Simpson, M.D., F.R.S.E., &c.—[Of 335 cases of cranial presentations at the Maternity Hospital, Edinburgh, Dr. M. Barry, house-surgeon, makes the following report, in a tabular form, of the positions of the head of the child:]

I.—*Occipito-anterior Positions.*

1. Position; or occiput directed to left foramen ovale, in 256 cases.
2. Position; or occiput directed to right foramen ovale, in 1 "

II.—*Occipito-posterior Positions.*

3. Position; or occiput directed to right sacro-iliac synchondrosis - - - - - in 76 cases.
4. Position; or occiput directed to left sacro-iliac synchondrosis - - - - in 2 "

Total, - 335

[The following table shows the position of the head in 3491 cases of cranial presentation, observed at the Heidelberg Hospital:]

I.—*Occipito-anterior Positions.*

1. Position; or occiput to left foramen ovale, in 2262 cases.
2. Position; or occiput to right foramen ovale, in 4 „

II.—*Occipito-posterior Positions.*

3. Position; or occiput to right sacro-iliac synchondrosis - - - - - in 1217 cases.
4. Position; or occiput to left sacro-iliac synchrondrosis - - - - - in 8 „

Total, - 3491

[In his clinical remarks on these cases, Dr. Simpson says:]

Observe this point,—either end of the axis of the long diameter of the fœtal head—that is, either its occiput or forehead—may be placed at either end of the long or right oblique diameter of the brim of the pelvis. Most frequently we find the occipital extremity of the infant's head placed forwards, or situated at the anterior extremity of the right oblique diameter. In other words, most frequently the occiput is placed behind the left foramen ovale; and this constitutes the *first* position of most authors who use a numerical nomenclature. But the arrangement is sometimes exactly reversed; that is to say, occasionally the frontal extremity or forehead of the infant is placed forwards or behind the left foramen ovale, and consequently the occiput is, under this cranial position, directed backwards, and to the right sacro-iliac synchondrosis. To

recapitulate;—in this last variety of cranial position (the immediate object of our investigations), the long diameter of the child's head lies as usual at the commencement of labour, parallel with the left oblique diameter of the brim, but with the face or forehead, instead of the occiput, placed behind the left foramen ovale; or, in other words, pointing forwards to the left groin. Dr. Hamilton and others have properly stated, these are not strictly cases of presentations of the forehead "to the pubis," but of presentations of the forehead to one or other groin. And I have already shown you why the groin to which the forehead points is so far more frequently the left than the right, that, for the present, I leave the latter variety out of consideration, and apply my subsequent remarks entirely to that cranial position in which the forehead points to the left foramen ovale or left groin. This position is the *third* position of the head in the two tables of cases which I have already shown you.

First, let us inquire when, at the commencement of labour, the occiput is situated posteriorly in passing through the brim of the pelvis, in what relative position does it emerge from the outlet? In other words, in occipito-posterior positions, *Does the Occiput Maintain the same Relative Position to the Back of the Pelvis in passing through the Brim, Cavity, and Outlet?*—In most of your text-books you will find this question answered in the affirmative. For instance, Denman, Merriman, Blundell, Hamilton, and others, allege, that in the natural mechanism of this class of cases, the head retains throughout the same position relatively to the parts of the mother,—that it enters the brim of the pelvis, passes down into the cavity, and makes its exit through the outlet, in the same position; that is with the forehead or face always directed anteriorly, and consequently the occiput always pointing posteriorly. Long ago, Solayres showed distinctly that this was by no means the common and natural course of events in instances of this presentation, but his observations were unattended to. Since Naegele, however, wrote his admirable essay on the Mechanism of Paturition, the whole subject has been much more studied; and we now know, from abundant and accumulated evidence, that the ideas generally held with regard to the mode in which labour proceeds in occipito-posterior positions are quite incorrect. For it has been ascertained, beyond the possibility of doubt and cavil, that in almost all cases in which the occiput is originally placed posteriorly, the head, upon descending down upon the floor of the pelvis, so far changes its position as to rotate round, so that at last the occiput, and not the forehead, emerges anteriorly under the arch of the pubis; and consequently, the face, which looked forwards, or towards the pubis at the commencement of labour, is turned backwards towards the sacrum or perineum at the conclusion of it. In short, in reference to cranial presentations, we may lay it down as a *general law*, admitting of few and occasional exceptions only, that in whatever position the head is found entering the brim, whether with the

occiput directed anteriorly, or directed posteriorly, it will ultimately pass through the outlet and vulva with the occiput placed under the arch of the pubes, and the forehead and face gliding over the perineum. When the forehead is primarily situated behind the left foramen ovale, as occurs in the cases forming the subject of my remarks,—the head in passing through the lower pelvic apertures, rotates to the left and backwards a quarter of a circle, and at last comes out at a position at right angles to that in which it entered; the occiput which was originally placed opposite the right sacro-iliac synchondrosis, rotates to the right and forwards in a corresponding degree so as to be placed opposite the foramen ovale of the same side, and emerges under the arch of the pubes; and the long diameter of the infant's head instead of remaining parallel with the right oblique diameter of the pelvis, is latterly born in parallelism with the left oblique diameter of the outlet.

Many practitioners report merely the position of the head as it is observed to emerge ultimately from the outlet, and not as it may be found higher up in the pelvis. But we have seen, that in occipito-posterior positions the occiput almost always rotates forwards, before it passes the vulva. Hence one enormous source of error. For all, or nearly all those cases which were originally occipito-posterior positions come to be thus inadvertently reported among the number in which the occiput is situated anteriorly.

[Dr. Simpson next alludes to the means of diagnosing the actual position of the head of the child, noticing briefly the movements of the fœtus, and the sounds of the fœtal heart, and then proceeds to speak of the most positive method, viz.:]

The Tactile Examination of the Child's Head.—Both the signs which I have already mentioned, the sensations of the fœtal movements, and the seat of the sounds of the fœtal heart, yield in value to the more direct and more certain evidence derived from actually feeling and touching the fœtal head with the fingers in a vaginal examination. When the finger is introduced, you feel the sagittal suture of the infant's head crossing obliquely the opening of the os uteri, in a line parallel with that of the right oblique diameter of the pelvis. Both in the common occipito-anterior, and common occipito-posterior position, this is the direction of the sagittal suture—so that the mere direction of the suture will not afford you a distinctive diagnostic sign. Run your finger, however, along the suture to either of its extremities,—say to its anterior extremity, which is generally easily reached, and you may at once fully determine the position of the head, by fully determining which of the two fontanelles is placed at the anterior or pubic extremity of the suture. If the fontanelle which you touch in this situation is four-limbed and quadrangular, it is of course the anterior fontanelle, and necessarily shows the forehead to be placed anteriorly; and consequently the occiput must be directed to the posterior part of the pelvis. But always be perfectly certain, that it is the anterior and not the posterior fontanelle which you are

touching, that it is a space or bregma quadrangular, and not triangular in its figure, and formed by the meeting of four, and not of three sutures.

[With respect to treatment Dr. Simpson observes:]

Upon this subject, let me, in the first place, state to you this strong and important fact,—in not one of Dr. Barry's seventy-seven cases,—and in not one of the other two or three hundred cases of head presentation, with the forehead directed forwards, which have occurred among the patients of the Maternity Hospital since its first institution—in none, (I repeat), has any kind of aid or interference by the hand, or forceps, or other instrument been required or given. In stating this as the result of our observations and practices here, I state what I believe would be the result of your observations, and the line of your practice, in your future professional experience. In a vast majority of occipito-anterior positions you require to offer no unusual aid or interference. In exactly the same way, in a vast majority of occipito-posterior positions—in ninety-nine out of the hundred—you require to offer no unusual aid or interference of any kind or description whatever. You must equally look upon the one position and the other as constituting a perfectly natural labour—so far as in each the mode and mechanism of parturition are concerned.

You will find, however, doctrines and practices very different from this, taught in regard to the treatment of occipito-posterior positions in most obstetric works and text-books, modern as well as ancient.

[In concluding his clinical remarks, Dr. Simpson drew the following results as arising from this inquiry:]

We have found many estimable authors considering occipito-posterior positions to be exceedingly rare; I have shown you that, on the other hand, they are exceedingly common. They are generally represented as maintaining throughout the labour their original position with the forehead anteriorly; I have pointed out to you that, on the contrary, in twenty-nine out of thirty cases, the forehead rotates round, and ultimately emerges posteriorly. Formerly it was believed that this internal rotation of the head was never performed by the unaided natural mechanism; now we know it to be easily accomplished in every, or in almost every case, and without the slightest artificial assistance of any kind. Many excellent authors allege that, in occipito-posterior positions, the process of labour, as a whole, is attended with unusual difficulty and danger; but we have seen abundant evidence to prove that this is a most ungrounded fear, and that the labour, like that in occipito-anterior positions, belongs more strictly to the class of natural labours. And, lastly, we have seen no small variety of artificial and operative measures more or less strenuously recommended in the treatment of these cases in some of our best and ablest text-books; but, on consulting the text-book of nature, we have further found that the peculiarities of cases of this position

required, in the way of artificial or operative aid—nothing—absolutely nothing. In commenting upon these cases elsewhere, I some years ago observed, "If there is any truth whatever in statistics, we venture to say, from the data we have adduced, that such cases daily occur, and pass over unobserved in hundreds of instances in which the labour is supposed to be, and no doubt is, perfectly natural." Occipito-posterior positions of the head, "require," says Naegele, "no peculiarly favourable circumstances, but these species of labours can be completed by the natural powers under the most usual proportions, in the same time, with the same expense of strength, and without greater difficulty, than when the head takes the more common position." Perhaps these remarks of Naegele are too absolute; for, in occipito-posterior positions, the occiput requires to pass in its transit, through a longer and more curved pelvic line, than in occipito-anterior positions; consequently in the Hospital statistics, drawn up for me by Dr. Barry, occipito-posterior positions seem on the whole to require a somewhat greater length of time than occipito-anterior positions. The difference, however, is so inconsiderable as not to invalidate in any, the slightest degree, what I have already stated regarding the perfect safety and facility with which unaided nature is capable of finishing the labour in this common class of cases.

But, supposing that, in consequence of inertia of the uterus, or constitutional exhaustion, or the state of the maternal passages, or size of the head of the infant, or any other of those causes which sometimes force us to deliver by the forceps in occipito-anterior positions, we were necessitated to use the same instrumental aid in an occipito-posterior position, is there any notable difference in the mode in which we should conduct the operation in the latter case, from the mode in which we should conduct it in the former? I believe there is, in one respect, an important difference, and that there is

One special Rule for Delivery with the Forceps in Occipito-posterior Positions. It is this. *In occipito-posterior positions the mechanism of the extraction of the head with the forceps, should be an exact imitation of the mechanism of the expulsion of the head by nature.* In other words, I am strongly convinced that, in the artificial extraction of the head, in occipito-posterior positions, we should make the forehead rotate backwards, and the occiput forwards, according to those rules which we have seen nature following under the same conditions. For here, as elsewhere, the more perfectly we imitate her principles, the more perfect will our own practice be. If the infant's head is of such a size as to pass with comparative facility through the maternal pelvis, we may, after seizing the head, forcibly pull it down and extract it in the position in which it was originally placed, namely, with the forehead still looking anteriorly. But if the head and pelvis are more accurately fitted in size to each other, such efforts will be fruitless, unless at the expense of great and unnecessary bruising and compression of either the mother or infant, or both. Almost all authorities, however, in

midwifery, seem to recommend and practise this direct traction. But the principle of the practice amounts to this,—it is as if (reverting to a previous simile) we attempted to push or pull forcibly the spindle of a screw through its corresponding nut, in a direct and straight line, instead of effecting the same object with far more ease and simplicity, by revolving the former upon and within the latter. I have now happened to be called to several cases of occipito-posterior positions, in which the forceps had been applied with the greatest adroitness and dexterity; where, subsequently, every allowable degree of force had been employed, but employed in vain, to pull forth the head in its original position, with the forehead directed anteriorly; and where I have succeeded, with a tithe of the power previously used, by adding to the requisite act of extraction a simultaneous act of rotation of the head, so as to turn the occiput anteriorly, and to the right, and the forehead posteriorly, and to the left.

Indeed, I sincerely believe, that such cases as those I have just spoken of, are not unfrequently regarded as unfit and improper cases for the forceps,—and that, as a consequence, the child's head is opened and broken down by embryulcia,—merely because the forceps have failed from the position of the head having been unattended to, or, if attended to, from the forceps not having been employed in a proper manner, in the attempts at delivery made with that instrument. An obstetric friend told me that some years since he received from nature a most instructive lesson upon this point. He had fixed a pair of curved forceps upon a head lying in an occipito-posterior position, and ineffectually pulled at it in that position, till he was afraid to pull more. He was resting for a pain or two, cogitating what step he should take next—and twhether he should perforate the infant's head, or not—when a very strong uterine contraction came on. During the contraction, the handles of the forceps were wheeled round in his hand, and the head was expelled, with the occiput under the arch of the pubes, and the concavity of his forceps turned towards the concavity of the sacrum. Nature thus strongly preached to him how he should have acted in order to assist her.

Dr. Smellie knew the propriety of rotating as well as extracting the head in these cases. He tells us, that in 1745 he applied the forceps in a case in which the large fontanelle was at "the left groin." Under the efforts which he made at direct traction, and so as to bring the forehead out anteriorly, the instrument slipped off three times, one of the blades giving way. He was still (he continues), "loth to destroy the child by opening the head," or to apply a blunt hook, and "luckily thought" of trying the forceps again, and, turning the forehead backwards into the hollow of the sacrum—and by this last plan he safely delivered the infant. "This method (he ingeniously adds), succeeding so well, gave me great joy, and was the first hint, in consequence of which I deviated from the common method of pulling forcibly along, and fixing the forceps at random upon the head. My eyes were now

opened to a new field of improvement, on the method of using the forceps in this position, (the occipito-posterior) as well as in all others that happen when the head presents."

Unfortunately, Smellie's observations on this point appear to have been, in general, completely overlooked by his various pupils and followers. Wallace Johnson, Denman, Hamilton, Ramsbotham, Davis, &c.,—tell us to extract the head with the forehead directed anteriorly and passing under the arch of the pubes. They seem all afraid that if we acted otherwise, and rotated (as I believe we should do)—the forehead backwards from the left foramen ovale to the left sacro-iliac synchondrosis, we should produce a violent and dangerous twisting of the neck of the infant. We have seen, however, that in 29 out of every 30 such cases, nature produces exactly this same rotation of the head in this same class of cases, and without any risk or danger whatever to the neck of the child. But in order that our mechanism should be equally safe with hers, we must imitate nature in the process as nearly as possible, and only turn, or attempt to turn, the head after it has already reached the pelvic floor—never when higher—and only during a pain, when the trunk and head are compressed together by the uterine contraction into, as it were, one mass, so that the body readily follows the movements of the head. The highest authorities also in the Continental schools, seem to have similar fears regarding the rotation, and lay down the same plan of extracting the head in the position in which it is already placed, viz., with the occiput posteriorly. Even those obstetricians who know most perfectly the natural mechanism in such cases, totally disregard and deviate from that mechanism in their own instrumental procedures. Thus, Naegele himself advises us to bring out the forehead anteriorly, when we use the forceps in occipito-posterior positions of the head. But, then, in explanation of this apparent inconsistency, we must remember that the different varieties of Levret's forceps, used by Naegele, and most other Continental practitioners, are so large and curved as not to enable us to rotate them and the head, after they are applied, without the most imminent hazard to the vaginal structures of the mother. It is in occipito-posterior positions—above all others—that we see the superior advantage of employing a *straight* pair of short forceps—such as those of Dr. Denman or Dr. Ziegler. They enable us to rotate the head easily and safely, as I can testify to you from sufficient experience. If we employed a *curved* pair in this position, and tried to turn the head with them, we should be obliged either to introduce them at first, or extract them at last, with their concavity, instead of their convexity looking backwards—and, consequently, with great and unnecessary risk of contusion and laceration of the soft structures of the mother, from the projecting ends and sides of the blades.

Northern Journal of Medicine, April, 1846, *p.* 216.

197.—*Difficult Labour from malformation of the Os Uteri.*—By G. Millert Davis, Esq., Surgeon to the Liverpool Fever and Workhouse Hospitals.—[The patient in this case was a strong robust woman, twenty years of age. She was, when seen by Mr. Davis, labouring under strong, and apparently expellant, pains, but on examination it was found that the labour had not progressed.]

The vagina was unusually short, not more than $2\frac{1}{2}$ inches in length; every portion of it could be distinctly felt. A firm longitudinal band extended along the posterior wall, as though the vagina were puckered longitudinally, while, above, the vagina terminated abruptly in a pouch; the finger was passed over every portion in succession, and the pouch found perfect in every part; at the upper part of the vagina, a little anterior to the usual situation of the os uteri, an ill-defined crescentic margin was perceived terminating gradually behind in the parietes of the vagina. Immediately posterior to this margin the parietes of the uterus and vagina appeared thinner to the touch than in any other position; a small quantity of a dirty-coloured fluid flowed at intervals from the upper part of the vagina; no os uteri was felt; the head of the child was pressing down upon the vagina, and descended slightly with each pain.

[Mr. Davis concluded that it was an imperfect condition of the os uteri that prevented the progression of the labour, and he decided to make an incision into the part. He observes:]

Before proceeding to make an incision, another very careful examination was instituted, and now, during a pain, I distinctly felt an aperture large enough to admit a crow's quill in the position indicated as having felt thinner than any other part, immediately behind the crescentic margin; the opening could scarcely be perceived during the intervals between the pains; there were no lips, no elevation of margin whatever.

At this time the upper part of the vagina was not more than two inches from the vulva, and on placing the patient on her back, separating the thighs, and opening the vagina with the fingers, this small aperture was seen perfectly, having the appearance of a circular hole, made by a punch, barely large enough to admit a director of common size, and through it the hairy scalp of the child was perceived.

A director, bent at an obtuse angle three quarters of an inch from the point, was introduced into the cavity of the uterus through this defective os uteri, and passed directly backwards, in which direction an incision near an inch in length was made with a probe-pointed bistoury, guarded by means of a little adhesive plaster to within an inch of the point; a catheter having been previously introduced into the urethra, the cutting edge of the bistoury was turned directly forwards, and an incision made to the extent of a quarter of an inch. The structure divided was of a firm texture, a quarter of an inch in thickness: not a teaspoonful of blood flowed, and the patient did not complain of pain. There were no bands on the sides which appeared to require division,

and it was therefore thought advisable to wait and see the result of a few pains.

[In four hours' time, the os uteri was more dilated, and Mr. Davis resolved to wait, and at the termination of five hours and a half the os was still more dilated, but there were six bands discovered, stretching from the vagina to the os uteri, as if formed by puckering of the vagina. These were divided, but still the head did not descend. It was then thought advisable to open the head of the child, since there was danger of rupture of the uterus, or laceration of the soft parts; the countenance also had become anxious, pulse 130, and there was cold perspiration.]

The perforator was therefore applied to the protuberance of the right parietal bone, the presenting part; a sufficiently large opening was made; the brain was broken up and escaped freely; the uterine contractions continued; the short forceps were applied, and traction made during each pain, and within a quarter of an hour the head emerged, the face turning to the inside of the mother's left thigh: the cord, which was round the neck, was slipped over the head; the shoulders and body were expelled by the uterine efforts, and the placenta was detached about ten minutes after the birth of the child; no laceration occurred; there was no hæmorrhage; the uterus contracting firmly; the patient was much exhausted; she was made comfortable, and forty minims of laudanum administered. The child was a large well-made female child.

[This patient recovered well, and left the hospital a month after delivery. Mr. Davis adds:]

Previous to her leaving, I made an examination as to the condition of the vagina and os uteri. An inch within the vagina a distinct and firmly resisting ring was observed, and within this the os uteri flattened, and not protruding into the vagina, and of an irregular form; from the left margin of the os uteri, extending between it and the ring, was a firm, thickened band, resembling somewhat the contracted cicatrix of a burn, and a second band took its course along the posterior wall of the vagina.

Medical Gazette, March 20, 1846, *p.* 500.

198—*On the Use and Abuse of the Forceps.*—By James Wilson, M.D., Glasgow.—[The object in the use of the forceps is twofold —to preserve the life both of mother and child. No instrument may be used more safely, or with greater destructiveness, and too many are apt to believe that the use of these instruments may be acquired with little thought and preparation. This will prove a fatal mistake, and the lesson involved may be of serious moment both to the patient and practitioner. With respect to the introduction of these instruments Dr. Wilson observes:]

The directions for the introduction of the forceps may be given in a few words: having made sure of the position of the head, in-

troduce the hand, well smeared with lard, within the os uteri; search for, and pass the fingers over the ear, so as to guide the blade over that organ, whatever may be its position. I have said, introduce the hand, and this seems to have been the uniform practice of Smellie. There are, no doubt, cases requiring the use of the forceps, which will not admit of the introduction of the hand; but it generally can be accomplished, and it is by far the best and safest practice.

It is true the passing of the hand gives some additional pain, by stretching the soft parts, but these must speedily be far more violently stretched by the instrument and the child's head. If the hand is not previously introduced, the blades are very apt to be pushed up at random, as the scalp is often so tumid as to render it quite impossible to recognise the sutures or trace their direction; and even when the sutures can be felt, an unusual depression or elevation of the chin may mislead us in our calculations respecting the passing of the blades; for although they may be passed over the sides of the head, they may not include the ears, nor have their points placed on the sides of the chin, which is the only safe way of acting with them.

Another great advantage derived from the introduction of the hand, is the protection it affords to the soft parts of the mother, and the integuments of the head. There is in general a small portion of os uteri which remains undeveloped, even when fully opened. When this undeveloped portion or small flap is closely applicable to the head, in passing up the blade without the hand as a guide, we are apt to pass the point of the blade on the outside of the os uteri; and the upper portion of the vagina being very tense, a very slight force will thrust the point through the vagina, and thus place the upper portions of the blades on the outside of the uterus, whereby the patient is likely to be destroyed, and the operator defeated. I believe this occasionally happens. I have often seen this exemplified, while my pupils have been operating on one of my machines, when they did not introduce the fingers so far as to pass them inside the os uteri. In introducing the hand, a certain wavering motion of the fingers will enable them to pass when the space is very limited, and with much greater ease than when this kind of motion is not attended to. On introducing the blade, if the point is passed closely against the palm of the hand, and surface of the fingers with a wrigling motion as it passes upwards, it will be next to impossible either to injure the mother or child's head. If either be injured, it may be considered an abuse of the forceps. I have observed, that there is often great difficulty experienced in locking the instruments. This is a proof that one or both blades must be wrong; in this case they must be adjusted; and this in general is easily managed if one have a clear conception of the position of the head. No attempt should be made to extract till the locking is effected, otherwise destructive injury may be inflicted, and a failure may be expected.

When the instrument is locked, many are in the habit of tying

the handles firmly with tape, and keeping them so till the delivery is effected. This is surely wrong. By doing so a greater degree of pressure is kept upon the child's head than is consistent with its safety. I never use any ligature of this sort; and in the intervals of acting, all pressure with the instrument may be, and ought to be removed from the head. I have no doubt this unnecessary pressure is occasionally the cause of the child's death.

With regard to the mode of acting with the forceps, many important points require to be distinctly remembered. If the head is pretty high in the pelvis, the different axes of the brim, of the cavity and outlet, must be constantly adverted to, otherwise we shall throw insurmountable obstacles in our way. With this view, the handles of the instrument require to be kept constantly back to the perineum, till some part of the occipital bone has cleared the arch of the pubes; should we bring the handles forward before this time, we shall prevent the occiput from getting under the arch; or should the head in defiance of our misdirected force, advance in the proper axis, the forceps would be thrown off at the back part of the head; or, on the other hand, should we forget the axis of the outlet, and neglect, as is very often done, to raise the handles towards the pubes, but continue to extract in the axis of the cavity, the result will be, either that the instrument is thrown off at the face, or if it retains the head within its grasp, there will be complete laceration of the perineum.

[The powers of compression, traction, and leverage, Dr. W. remarks, are all, to some extent, to be brought into operation, in using the forceps; but he says, compression ought never to be made beyond the extent of diminishing the child's head to *three* inches, in the transverse diameter; indeed the instruments are seldom constructed to admit of more. We should be very careful how we use traction. More than moderate force should never be used, for where this is done, it is a case that requires a different mode of treatment.

Many practitioners never use the forceps as *levers*, that is, never give the instrument any lateral motion; but it is evident from the direction of the axis of the pelvis, that this is necessary, for, in order that we should adopt one extracting force to the progress of the head through the pelvis, we should pull in a circle, which we cannot do; but by using lateral motion we may bring down the head without much extracting force. This motion should, however, be very gentle, for fear of injuring the soft parts.]

There is another consideration, which, if constantly borne in mind and acted on, will contribute very materially to the safe and successful use of the forceps. I mean the quarter turn the head makes in its descent through the pelvis. For example, if we apply the forceps when the head is high, the one blade will be almost directly behind the symphysis pubis, and the other in front of the sacrum. Now, should we inadvertently, in an extraction, continue the forceps without change in this position, as the head advances, we should find it next to impossible to deliver. If we would succeed,

the instrument must be held in such a way (loosely) as to permit the head to make its natural and quarter turn.

If the head does not make this movement spontaneously, it will become our duty to assist it in so doing, and turn the occiput as the head advances from the left acetabulum, so as to bring it ultimately under the arch of the pubes: a very slight neglect of this particular will be quite sufficient to defeat our purpose of delivery, or if we persist and use greater force, we may destroy the child, and seriously injure the mother.

The want of tact, or of sufficient manual training in this operation, will perhaps be found the most frequent cause of failure and disappointment. It is a great mistake, both in surgery and midwifery, to suppose, that perfect knowledge will insure success in the operative department of either branch. *The Head must be perfectly informed, but the Hand must be no less perfectly trained.* Operative midwifery, particularly this operation, is purely mechanical, and never will be properly performed without a long process of training. I will venture to assert, that there are more failures with the forceps than in any other operation the practitioner may be called upon to perform; and I am convinced, that the only way to acquire the tact and training so indispensible to success, would be the frequent and familiar use of obstetric machines. I would not, for any consideration, want those useful assistants, whereon I can test and try myself, when I meet with any difficulty, so that I may be prepared to meet and manage similar cases in future.

I have reason to suspect that this mode of training is not sufficiently appreciated; and there is, I fear, a lurking belief that many of the operations in our profession may be performed intuitively, particularly operative midwifery. But as soon may we expect the mechanic to perform any of the manifold operations of his craft by reading or listening to lectures on them, without the toils and training of a long apprenticeship,—or that the artist, from the knowledge alone of the principles of painting, should produce a finished picture,—or that the stone should, as if by magic, assume the figure and animated form of some ancient statue by the first rude touches of the chisel and mallett,—as to suppose the complex, and often dangerous operations of which we have been treating, and which generally involve the lives of two beings, can be either safely or successfully performed without a previous and sufficient manual training. I would not for a moment suppose, that the artificial expedient here recommended is at all to be compared to the use of the forceps on a living subject; but as the great proportion of young men cannot possibly have an opportunity of using, or of seeing the forceps used on women during their academic attendance, it is surely better to exercise them on these machines, than to go forth into the world to try their rude and untrained hands on delicate women, and thus bring discredit on a useful operation, and destroy those on whom they make their first attempts.

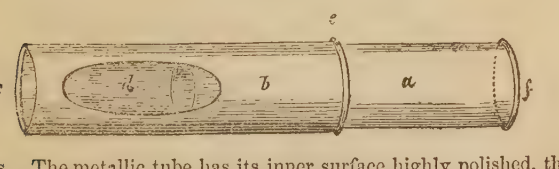
Monthly Journal of Medical Science, May, 1846, *p.* 331

199.—*Proposals for the Improvement of Diagnosis in the Investigation of Diseases of the Uterus, with an account of a newly-invented Speculum Uteri.*—By PROTHEROE SMITH, M.D., &c.—Dr. Smith has lately published a paper with the above title, in which he observes, that as the improvement of physical diagnosis is always calculated to advance medical science, so the *simultaneous* use of direct tactile examination and visual inspection of the diseased organ, in the investigation of uterine affections, would greatly tend to establish the accuracy of diagnosis. This object, which has never, till very recently, been attained, is supplied by the instrument under consideration. Dr. Protheroe Smith's speculum is certainly one of the best which we have seen described. Dr. Smith says:]

It admits of easy introduction, and permits of tactile examination prior to its application, which is readily accomplished, so that the instrument is passed into the vagina, and the part required is brought into view, whilst the finger still rests upon it, and accurately adjusts it to the open end of the speculum. This speculum is so simply constructed that any one, with very little practice, can adapt it so as to display the part he is desirous to see with unerring certainty, and whilst it is still exposed to sight, he is enabled with his finger to investigate further the physical condition of the organ, without any difficulty or chance of disappointment. When the operator is satisfied on this point, and withdraws his finger, the instrument presents a complete cylindrical speculum uteri, whose internal surface forms a powerful reflecting mirror, which throws a strong light upon the exposed part. By the same contrivance the finger may be again admitted, whilst the speculum remains adjusted, as often as further taxis is desired. Thus the difficulty referred to by Dr. Simpson is entirely removed, whilst visual inspection, together with tactile examination, are simultaneously brought to bear upon the physical diagnosis of uterine disease.

I will now proceed to a description of the instrument, and afterwards endeavour to explain the manner in which it is most easily employed. The speculum consists of a glass cylinder, (fig. 1, *a*) accurately fitted to an outer one of metal, (*b*,) within which it

Fig. 1.

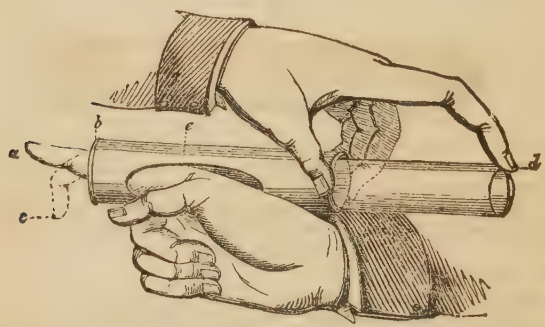


slides. The metallic tube has its inner surface highly polished, the reflecting powers of which are still further increased by the glass cylinder which it contains. The edge of the smaller or uterine extremity is carefully rounded into a smooth ring (*c*), which pro-

jects slightly from the inner surface, facilitating its introduction per vaginam, as also presenting a limit to the further progress of the internal tube. In its side is cut an oval aperture (*d*), of about three inches in length, and two in breadth, and extending to within half an inch of the end of the cylinder. Its other extremity terminates in a rim (*e*), which projects about a line from the external surface of the tube, having its surface blackened, for the purpose of absorbing any rays of light which might otherwise be reflected, and impede the view by their dazzling effects. There is also a corresponding rim to the glass tube (*f*), by which it is more conveniently withdrawn from the metallic cylinder.

In describing the best mode of using the instrument, I would premise that the patient, during its employment, should lie horizontally on her left size, with the thighs bent upon the abdomen—the usual position in which women are placed in this country during parturition. After the ordinary examination with the finger, the speculum, well greased, is to be held by the rim of the external tube with the thumb and middle finger of the left hand, the ring and little fingers resting on the tube, and the forefinger upon the rim of the internal tube, which is to be previously drawn from out of the former to an extent sufficient to allow the introduction of the index finger of the right hand through the oval aperture, so that its knuckle or digito-metacarpal articulation should lie in the cavity of the cylinder, (fig. 2, *e*). The point of the forefinger of

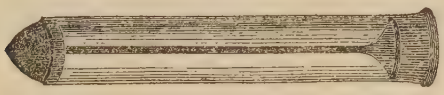
Fig. 2.



the right hand (*a*), thus projecting from the open end of the speculum, which should be held parallel with the thighs of the patient, is carried into the vagina, the rounded edge of the tube resting on its back, (*b*), and is directed towards the inferior margin of the symphysis pubis, by which movement an oblique segment of the extremity of the instrument is readily passed within the vulva and os externum vaginæ, when, by pressing the perineum,

by flexing the first and second joints of the examining finger, (*c*,) and at the same time by inclining the tube backwards in the axis of the vagina, it is at once admitted within the passage, and without difficulty conveyed to the os uteri. The finger employed in effecting the introduction of the speculum having accurately adjusted its open extremity to the part to be exposed, may then be withdrawn by gently pressing against the perineum and posterior surface of the vagina, during which process the internal tube is to be passed up to its full extent by the index finger of the left hand, which rests upon it, (*d*). In this movement, all risk of including a portion of the lining membrane of the vagina is avoided, if the finger be not wholly removed from the passage until after the inner tube is completely introduced. The operation is then concluded, and the part exhibited by the speculum must of necessity be that which had before been detected by touch. Should it afterwards be deemed expedient to feel the part exposed to sight, it may be accomplished by withdrawing the internal tube to the same extent as at first, when the examining finger may again be passed through the oval aperture above mentioned, whilst the operator is viewing through the speculum the digital examination, which process may be repeated as often as is thought necessary, without displacing or removing the instrument. This speculum is also furnished with a conical plug, to facilitate its introduction into the

Fig. 3.



vagina, in cases where circumstances occur to render the other mode at all difficult, after which it may be withdrawn, as in the ordinary cylindrical speculum, and the finger passed through the oval aperture as already described. With the view to economise space, I have contrived, by means of a double tube, sliding like a telescope, to make the stem of the plug subserve the purpose of a porte-caustic and mop.

I have found this instrument of great use in examining the condition of the vaginal passage. With this view it should be passed per vaginam to its full extent, when by partially withdrawing the glass tube, a portion of the lining membrane is seen protruding through the oval aperture into the cavity of the cylinder, when by turning it gently round, every part of the canal may be successively brought into view. Thus it has been found to be of incalculable assistance in cases of vesico-urinary fistula, when the opening through the vesico-vaginal septum is so minute as to perplex the operator, if not to elude his search. The employment of this instrument likewise renders any operation in the vagina more practicable, by the complete manner in which it exposes

the part, and at the same time affords room for the movements of the surgeon.

For the application of leeches to the os and cervix uteri, or to the surface of the vagina, it is equally well adapted, so that the difficulty which at times attends the use of this remedy, is hereby much diminished. To accomplish this, two fine wire-gauze tubes are supplied, similar in construction to those cups employed in leeching the surface of the body. One is adapted for the os uteri, (fig. 4), and slides within the glass tube. The other, for the

Fig. 4.

vagina, (fig. 5), is made to fit the outer or metallic tube, and

Fig. 5.

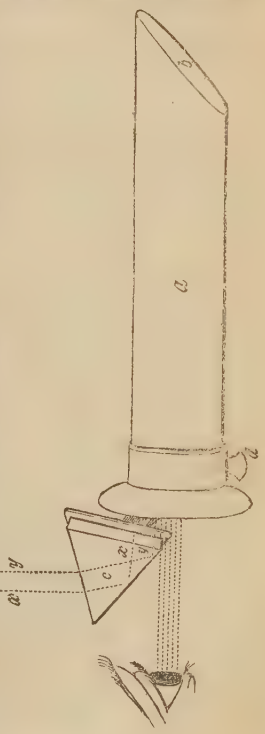
occupies the place of the inner one. In the former, one extremity only is open, through which the leeches, previously placed within it, are brought into immediate contact with the os tincæ, by pressing on a wire which projects from the other extremity, and which is attached to a piston, which slides within the tube. In the latter (fig. 5), each end is closed, but there is an oval aperture similar to that of the metallic cylinder, within which it should be placed, containing the leeches, with its opening turned in a contrary direction to that of the outer tube. The speculum may then be introduced, and the leeches applied to the affected part, by turning the tube until the two oval openings correspond. This instrument also facilitates the use of topical remedies to the uterus and vagina, so that nitrate of silver, &c. may be employed with great accuracy to any given extent. This operation, as well as that of leeching, can be performed without the slightest exposure. Indeed, in the use of this speculum, the person of the patient ought never to be in any way seen, as, by adjusting her dress around it, nothing externally but the free end of the tube need be brought into view. I would here desire also to remark, that in offering the above observations, I wish it to be understood that I am very far from advocating the indiscriminate use of the speculum in the investigation of uterine diseases, but simply that whenever its aid becomes essential to correct diagnosis, the instrument I have ventured to bring before the profession will be found well adapted to that end.

I will now concisely recapitulate the advantages which the use of this instrument affords, of which I have had satisfactory evidence in my own experience, as well as in that of others. It offers to the profession the means of facilitating the diagnosis of the diseases of the uterus, by removing the chief impediments to the employment of the speculum—namely, the difficulty and uncertainty of its application. It enables the practitioner to expose to his view the precise part he discovers by touch, without risk of disappointment, whether it be the os and cervix uteri, or the surface of the vagina, and likewise to demonstrate it to others. It also simplifies the application of leeches and other topical remedies, without exposure of the person of the patient, and yet with unerring accuracy. And lastly it accomplishes the object, never heretofore attained, of employing *simultaneously* both visual inspection and tactile examination in the investigation of uterine disease.

[We believe that this instrument has already been adopted by many of the leading obstetric practitioners in Great Britain; and we are given to understand, that the statement which we made in Vol. X, p. 256, respecting Dr. Smith being anticipated in this instrument by Mr. Coxeter, is incorrect. Dr. Protheroe Smith establishes his claim to originality in a letter which appeared in the *Lancet* July 27, 1844.]

Lancet, Feb. 22, 1845.

[We perceive a variety of specula to be now before the public, some of which, we think, ought to be more extensively known and appreciated. There is one described by Dr. Adam Warden, of Edinburgh, which we think particularly well adapted for examination of the os uteri, when the anterior lip is more than usually large. Even in the most healthy state, the anterior lip is rather longer than the posterior, so that by means of specula which are perfectly circular at the extremity, it will often be difficult to obtain a good view of the posterior lip: but, by Dr. Warden's instrument, which is *sliced* off at the end, as illustrated in the accompanying wood-



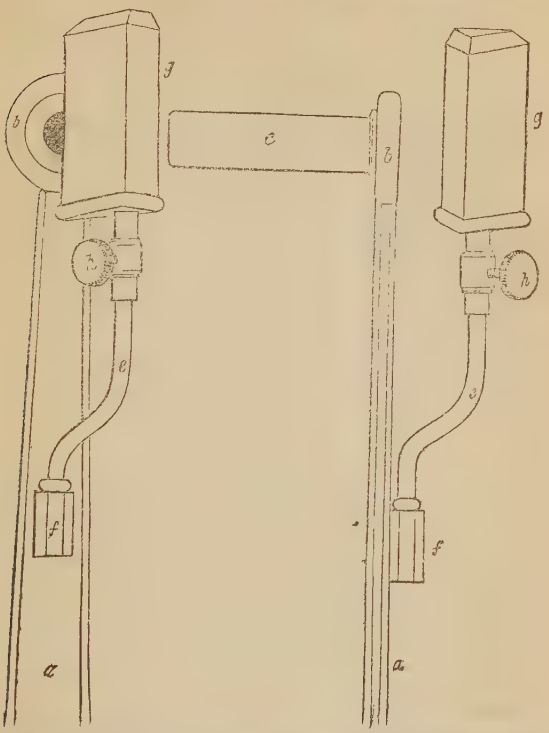
cut, the os uteri more easily slips into the end of the tube, and the view is more complete. In many cases the fundus uteri falls much more forwards than usual, throwing the os and cervix uteri more downwards and backwards, so as to press almost upon the anterior wall of the rectum: in such cases, this speculum will be found very useful, and especially when assisted by the ingenious contrivances of Dr. Warden to throw a strong light upon the parts.

While on the subject of *specula*, we will take this opportunity, which we ought to have done in our last volume, of more particularly calling attention to the admirable instruments of Dr. Warden. When we are examining the different open passages in the body, as the ear, the throat, or the vagina, our own heads frequently interrupt the direct rays of light from impinging upon the object. Dr. Warden, however, has so contrived his prism, that the light may be placed in another situation, while the observer can look down the speculum without causing his head to darken the passage.

The accompanying wood-cuts will more easily illustrate our meaning. Although more especially adapted for the examination of the external ear, they will serve to shew the principle which is in view, and which is brought into actual practice by Dr. Warden, in examining the os uteri and vagina. By the instrument which Dr. Warden formerly used to examine the *throat*, the image was *inverted*, but he now so manages the operation that inversion of the objects does not occur, by substituting a prism affording a double total reflection. Dr. Warden describes his instrument for the ear as follows: the letters corresponding to those in the accompanying diagram.]

It consists of separate portions: a straight handle, *a a*, five inches in length, terminating in a ring, *b*, of half an inch internal diameter, the ring grooved in its interior as a screw. To this screw are adapted four canulæ or straight tubes, *c*, of one two, three, and four lines calibre, and another of a funnel or tapering shape, applicable to the dimensions of the auditory canal at different ages and under different degrees of constriction resulting from disease; the wider mouthed canula is intended to be employed for preliminary exploration and removal of any accumulated cerumen obstructing the passage of the light, also for affording a proper field for the passage of instruments and other topical manipulation. The canulæ are an inch and a quarter in length, and terminate in blunted edges to prevent injury in their passage into the ear. From the middle of the straight handle, and at an angle with it of about 20°, arises a curved branch, *e*, moveable in a pivot joint at *f*, toward either side of the handle. This branch forms a stalk, on which a prism of flint glass, *g*, is perched erect, to the level of the opening of the affixed canula. The prism rests in a metallic socket, and is made to revolve on its own axis at the touch of the finger, or to remain fixed in any desired position by the aid of a small clamping screw, *h*. The instrument is thus complete for use. The canula is to be introduced into the ear to be examined, the patient being seated by a table, having a good light of a gas jet or argand burner at a

convenient distance to one side. The surgeon being placed opposite to the ear to be inspected, a face of the prism is turned towards the light, and it is made to revolve until the luminous spectrum is



conveyed to the bottom of the canula, and to the surface sought to be observed. There is no difficulty in the adjustment of position, when the relations of the light and the object are ascertained by a little experience; when this adjustment is made, the full and clear illumination of the object is at once obtained, and with a degree of brilliancy proportioned to the quantity of light employed in the particular observation. Where different circumstances require it, the intensity of the light may be artificially increased to any desired extent.

[Dr. Warden would even extend the use of his speculum to the examination of the rectum. He says on this subject:]

The advantage of Prismatic Illumination consists in the opportunity it affords of examining the recesses of the open cavities of the body by light of any desired intensity, and that placed on either side of the observer, so as not be liable to be intercepted by his shadow, nor to interfere with the freedom of any operative procedure; and by the combination of two prisms, one placed at the external opening of the speculum, the other moveable within it, so as to traverse its extent, disease presenting itself at the opposite extremity of the tube may be fully inspected, while through the transparent sides of a glass tube, or the interrupted continuity of a metallic one, the whole surface of the passage may in succession be surveyed, and remedial appliances conducted to any point affected with disease. Thus the numerous and serious affections of the straight-gut, whose nature is often obscure, and the treatment uncertain and difficult, may derive all the advantages which light and the sense of sight are capable of contributing in other cases. And these advantages are not confined to the very limited extent to which touch can be carried in that particular situation. Those cases of highly-seated stricture which occur at the farther extremity of the straight bowel, and so are removed beyond touch, and all satisfactory management, may, by the method which I have proposed, be brought fully under examination, and have the treatment adapted with the same accuracy as in the more superficial affections.

Edinburgh New Philosophical Journal, Oct. 1844.

[At a meeting of the Royal Medical and Chirurgical Society, a new speculum uteri was exhibited to the members, invented by Mr. Fergusson, of King's College Hospital. It appears to possess many advantages. Its merits may be summed up as follows:]

1. There is a reflecting surface within, more brilliant than he has ever seen on any other instrument of the kind.

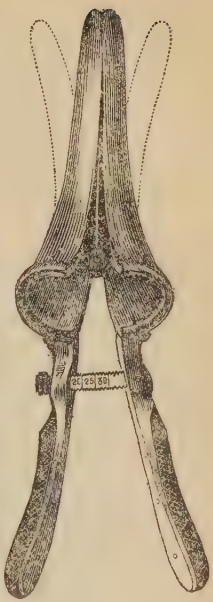
2. This surface cannot be tarnished or affected in any way, by the urine, discharges, lotions, acids, or caustics.

3. The instrument is cheaper than any other known of, excepting the common pewter one, which has many of the objections alluded to.

The tube is composed of glass, coated on the outside with silver leaf and varnish, then with cotton cloth, to obviate danger from the breaking of the glass; and, lastly, with caoutchouc, to give a smooth surface externally.

Medical Gazette, Dec. 19, 1845, *p.* 1484.

Ricord's Speculum Uteri,—its Application, &c.—Blenorrhagia of the uterus cannot be properly investigated without the aid of the speculum. The bivalve speculum, of which we subjoin a woodcut, is that used by M. Ricord, and recommended by Mr. Acton.



"It consists of two valves united at about the middle point, allowing both extremities to be widely opened; the narrowest part is thus placed at the vulva. To each valve a handle is attached, by which means space is gained, and the light falls upon the interior uninterruptedly, and pressure upon them causes a dilatation of the two extremities, which can be maintained, diminished, or increased by means of a screw." Its employment is very simple, but, like the catheter, requires some practice.

The following are Mr. Acton's directions for passing the instrument:

"The patient should be placed on the edge of the speculum chair, or on a bed, with a pillow under the head and shoulders, the thighs bent on the pelvis, and the legs on the thighs, the feet supported on two chairs. The surgeon should place himself between the lower extremities of his patient, and requires no assistant,—an important thing in private practice. The speculum, previously warmed and greased with a white pomatum, is thus to be introduced:—holding the valves of the instrument firmly together with the right hand, the surgeon should separate the nymphæ by means of the index and ring fingers, while, by the aid of the middle finger of the left hand, he depresses the lower part of the vulva.

"This should be done gradually, but gently; at the same time the extremity of the speculum should be introduced, the handles turned towards the left thigh; the side of one extremity of the valve should press upon the middle finger; the other valve will necessarily be applied against the posterior surface of the meatus, along which the surgeon must pass it by depressing the instrument, without tearing or excoriating the mucous membrane. Immediately the speculum has passed the ring of the vulva, it should be directed in the axis of the pelvis, and the operator should separate the valves; by this means he is enabled to see the condition of the vagina and uterus, and, finally, the instrument will surround the neck of that organ.

"It is unnecessary for this purpose to employ a very long instrument, or push it on until the neck of the uterus is embraced, as this would expose the organ to laceration, and cause great suffering if the instrument should be caught in the *cul de sac* of the vagina, as often happens. To avoid this, we recommend that the situation

of the neck of the uterus be previously ascertained by the *toucher*, so that the instrument may fall at once upon it; the neck of the uterus will be recognised by the smooth condition of the mucous membrane, and by its colour, which usually differs from that of the vagina. Useful indications for finding it may often be derived from the streaks of white of egg like mucus, which flow from the uterus into the vagina. In spite of these indications and precepts, should the surgeon find the speculum entangled in the *cul de sac* of the vagina, instead of pushing it onwards, let him gradually withdraw the instrument, at the same time that the valves are separated, and the neck of the uterus will at once come into view."

Medical Times, Nov. 22, 1845, *p.* 175.

[On this subject, the editor of the *Medico-Chirurgical Review* makes the following remarks:—"In our experience, the common cylindrical speculum, either of metal, or, as we prefer it, of glass, is the most simple, useful, and easily-applied instrument that we know of. It is quite sufficient for the examination of the cervix and vagina in most of the diseases of these structures, and for the application of local remedies for their relief. Sometimes we find the metallic two or three bladed speculum of use, when we want to expand the upper part of the vagina, so as to get room to twist off a small polypus for instance, or to get at a vesico-vaginal fistula, &c. One of the practical difficulties which is met with in the exploration with the speculum, is to get the cervix nicely within its cylinder, and, for correcting any difficulty in this respect, M. Colombat has invented a kind of concave lever, with which he can draw this part within the speculum. We have seen other contrivances for this purpose, such as a long hole in one part of a metallic tube, or a movcable shutter, which may be drawn out of the speculum, and thus allow a finger to enter and reach and re-dress the cervix. We usually find that a little patience, with a previous arrangement of position, according to the circumstances of the case, will generally be sufficient to effect this purpose, with the ordinary cylindrical glass speculum without these mechanical complications. With reference to the position of the patient, either the back or side, or in some cases on the elbows and knees, on an ordinary bed somewhat raised, have each their facilities for exploration, and ought to be selected according to the peculiarities of the case. We have frequently adopted with advantage the half-sitting, half-reclined posture, with the pelvis brought to the extreme edge of a chair, and the trunk thrown backwards, especially when we have had to perform the very useful little operation of scarifying the cervix, which may in this way be completed without any mess or trouble."]

Medico-Chirurgical Review, April, 1846, *p.* 339.

203.—*Inversion of the Uterus from Short Funis.*—By Robert Smith, Esq., Aberdeen.—[Mr. Smith's patient was enduring very severe labour pains, which suddenly subsided as soon as the child's head rested upon the perineum, and the most violent rigor set in.

She became deadly pale, and covered with a cold clammy perspiration. Mr. Smith suspected rupture of the uterus to have taken place; he gave a stimulant, and afterwards an opiate. The rigor soon ceased, but as soon as it had done so, she gave a most terrific scream, and the child's head and shoulders were born. The bystanders, apparently suspecting, by their looks, that there was some mismanagement, could scarcely be persuaded to stay to give assistance. The patient still endured agonizing pain, and begged for the child to be taken away. Mr. S. extracted the arms, and on turning down the bed-clothes, the following appearances presented themselves:]

The infant, a boy, was lying on his back, apparently lifeless, his legs and part of the thighs retained in the vagina, and the funis so much on the stretch, that the skin of the abdomen was dragged out about an inch and a half. Having used smart friction over the region of the heart, he gave a slight scream, and having lifted him up towards the body of the mother, so as to relax the cord, the extremities passed out with a little assistance. The child was immediately separated, and handed to an assistant; but the mother still continued to complain of most acute pain. On making an examination, I found the placenta so near the os externum, that I thought I had nothing to do but to lift it out; but such was not the case, for I found it attached to the uterus. I immediately nibbled away the attachments with my finger and thumb with the greatest caution, and on removing the placenta, I said, "Now, you are all right, for the after-birth is away." "Oh no, oh no!" said she, with a low and desponding moan, "I'm not right, I never was this way before, I'm still in great pain, but I cannot cry now." I immediately examined again, and found the *uterus* (fully three-fourths, according to the feel of it) *inverted*, the os girding it round like a cord, and of course I lost no time in reducing it; this was done with the greatest ease; and in order to insure permanent contraction, I thrust my hand into the cavity, which gave no pain, and having kept my doubled fist there for about half a minute, it gradually closed upon it, and thrust it out, precisely as if it had been another placenta. The mother was immediately bound up firmly, the pains having entirely ceased, and in the evening, she was sitting up in bed, suckling her baby, as if nothing had happened.

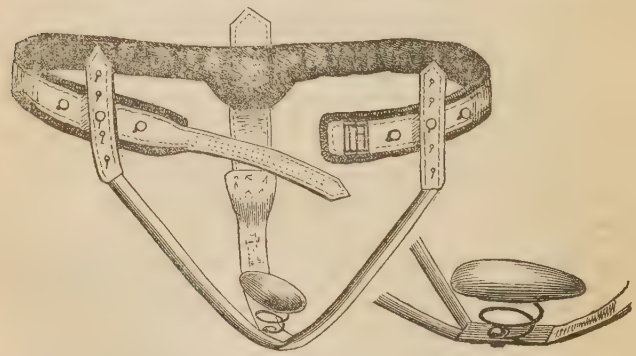
The patient lost very little blood, and complained of no pain whatever after the uterus was reduced. The funis was not more than six inches long, perhaps about eight when on the stretch. The placenta was remarkably small; the child was of full size.

Monthly Journal of Medical Science, May, 1846, *p.* 359.

[While on the subject of displacements of the womb, in which we particularly include the different degrees of prolapsions, we must express our regret, that more efficient and simple means of keeping the os and cervix in situ, have not yet been invented. We

are aware of the many contrivances which have been made public from time to time, most of them having to be introduced up the vagina, and kept in that situation by some force; but many of them are highly objectionable, and many are useless. The most disagreeable cases are those, of course, where the os and part of the neck of the womb pass, or attempt to pass, the external orifice; and if we could comfortably and firmly apply compression on the anterior portion of the perineum, so as considerably to diminish the size of the entrance of the vagina, we should be able to prevent many of these cases becoming extremely intractable.

The most simple and efficacious instrument for this purpose which has yet come under our notice, is one constructed by Mr. Eagland, surgical instrument maker, of Leeds. It consists of a soft padded bandage, which passes round the hips, being seated when on the body, on the sacrum behind, just above the hip-joint at the side, and upon the pubes in front, at which part are the necessary fastenings, one for obtaining the proper degree of tightness round the hips, the others situated near each inguinal region, or inner front of the thigh; to the back of the body bandage, just where it rests on the sacrum, is attached a strap, bearing a steel spring, at the extremity of which is a spiral spring, supporting an oval ivory compress, which is so arranged as to make pressure of almost any required degree on the anterior edge of the perineum, and partly on the external labia: this compress is retained in its proper situation by two straps passing up in front and fastening to the belt at the inguinal region on each side. The accompanying diagram, taken from Mr. Teale's work on Hernia, will convey a better idea of, and illustrate more particularly this instrument.



From the ample provision made for every possible contingency of attitude and motion, and the unerring certainty of its operation, we feel convinced it is far superior to the usual means employed to give support in these cases; the different kinds of

pessaries are often highly objectionable, and if we can effectually, but gently compress the vaginal canal at its external aperture, the patient may be saved considerable inconvenience: such, at any rate, are the desirable effects accomplished by this instrument.

Mr. Eagland has also constructed another beautifully simple and ingenious instrument for prolapsus ani, which is applied much in the same way as the above, but differing considerably in its mechanical arrangements. This instrument we have found to be very efficacious in the most obstinate cases of prolapsus ani, and if it have not cured the affection, it has administered the greatest relief.]

202.—*Treatment of Pruritus Vulvæ.*—Having been a great many times consulted for the relief of pruritus vulvæ, and most frequently in pregnant women, I have rarely had occasion to order anything more than the following formula, viz.:—

℞. Sodæ borat. ℥ss.; morphiæ sulphat. gr. vj.; aq. rosæ distillat. ℥viij. M. F. sec. art. mist.

I direct the person to apply it thrice a day to the affected parts by means of a bit of sponge, or a piece of linen, taking the precaution first to wash the surfaces with tepid water and soap, and to dry them before applying the lotion. I can confidently recommend the prescription as suitable in most of the cases of this most annoying malady.—*Medical Gazette.*

Dublin Medical Press, Jan. 21, 1846, *p.* 40.

202.—*On the Treatment of Menorrhagia.*—By Dr. Ditterich, of Munich.—Dr. D. recommends the internal use of nitrate of silver as a remedy for this troublesome and obstinate complaint, as well as for the leucorrhœa which is present during the intervals and the nervous symptoms. The prescription is—℞. Nit. argenti, gr. iij.; aquæ distill. ʒij. solve. Of this solution ten drops are to be taken two or three times daily, and gradually increased to fifteen drops. The author affirms, that the use of this solution, for a period of from four to six weeks, will perform a certain cure. After the lapse of about ten days, the leucorrhœa diminishes, and by the second menstrual period, the catamenial secretion is reduced to the proper quantity, and the nervous symptoms disappear. Koph has also recommended the nitrate of silver for the same disease in doses of one-tenth to one-twelfth of a grain every two hours.—*Neues Repertorium*, 1845, *S.* 60.

Northern Journal of Medicine, Dec., 1845, *p.* 435.

[Notwithstanding the increased size of the present Volume, we find ourselves compelled from want of space and time, to omit several very interesting articles, to which we advise the reader,

if he wants further information on any of these subjects, to refer in the Journals which we mention, viz.:]

1. On the Ophthalmia of Puerperal Women. By Robert Lee, M.D.—*Med. Chir. Trans., Vol.* 28, *p.* 345.

2. On the Application of the Actual Cautery to the Spine in Functional Diseases of the Uterus. By Dr. Mitchell.—*Dub. Med. Press, March* 11, 1846, *p.* 148.

3. On the Cervix Uteri; its Physiology and Pathology. By Dr. Oldham.—*Med. Gazette, April* 17, 1846, *p.* 667.

4. On Ulceration and Induration of the Cervix Uteri. By Dr. J. H. Bennet.—*Lancet, March* 14, *&c.*, 1846, *p.* 294.

5. On Occlusion of the Os Uteri. By Dr. Corral.—*Med. Times, Jan.* 10, 1846, *p.* 285.

6. Case of Cæsarian Section. By Dr. Long.—*Monthly Journal of Med. Science, Nov.*, 1845, *p.* 859.

Ditto, by W. Lyon, Esq.—*Ibid, Dec.*, 1845, *p.* 885.

Ditto, by J. Goodman, Esq., Manchester.—*Med. Gazette, Dec.* 26, 1845, *p.* 1506.

7. On Ovariotomy. By Dr. Cormack; with Remarks, by Dr. Simpson, of Edinburgh.—*Monthly Journal, Jan.*, 1846, *p.* 54.

8. Case of Apparent Spontaneous Cure of Ovarian Dropsy.—*Ibid, Feb.*, 1846, *p.* 125.

9. Case of Ovarian Dropsy, treated by Pressure, &c., &c. By Isaac Brown, Esq., London.—*Lancet, Jan.* 10, 1846, *p.* 33.

10. Case of Ovarian Dropsy, treated successfully by Mr. Brown's Method. By William Eccles, Esq.—*Lancet, March* 7, 1846, *p.* 276.

11. Case of Ovarian Dropsy successfully treated by Thomas Hunt, Esq., Herne's Bay.—*Lancet, Jan.* 24, 1846, *p.* 93.

12. Treatment of Ovarian Dropsy. By James Carson, M.D., Liverpool.—*Prov. Med. Journal, Feb.* 25, 1846, *p.* 88.

13. Remarks on a Case of Ovarian Section. By Drs. Bennett and Handyside.—*Edin. Med. and Surg. Journal, April* 1, 1846, *p.* 305.

14. Extirpation of the Uterus. By T. Gregson, Esq., Newcastle-on-Tyne.—*Med. Gazette, Feb.* 20, 1846, *p.* 342.

15. On a Peculiar Form of Puerperal Affection. By Samuel Lawrence, Esq., Montrose.—*Monthly Journal, March*, 1846, *p.* 161.

16. Amenorrhœa and Suppressed Menstruation, treated by the Bark of the Prunus Laurocerasus.—*North. Jour. of Med. Jan.* 1846, *p.* 49.

17. On the Treatment of Abscess of the Female Breast, by Compression. By Dr. O'Ferrall.—*Dublin Hospital Gazette, April* 15, 1846, *p.* 257.

18. On Retroversion of the Unimpregnated Uterus. By Edward Rigby, M.D.—*Med. Times. Nov.* 22, 1845, *p.* 180.

A SYNOPSIS,

CONTAINING

A SHORT ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THE FOREGOING PAGES OF THIS VOLUME; AND SHOWING, AT A GLANCE, THE MOST IMPORTANT INDICATIONS OF TREATMENT BY DIFFERENT WRITERS, PUBLISHED WITHIN THE LAST HALF-YEAR.

DISORDERS AFFECTING THE SYSTEM GENERALLY.

Fevers.

Typhus.—The great indication of treatment is to produce fibrine, i. e., to separate the nucleus (the true representative of fibrine) from the envelope of each blood corpuscle. By giving chlorine (muriatic acid) and ammonia, alternately, this is accomplished. The envelope is decomposed, the nucleus remains undissolved.—(Dr. Richter, p. 10.)

Dilute the system with nitrogenised matters, from the fact of ammonia or nitrogen being deficient in the system in typhus. After giving a full dose of castor oil, give 10 grains of carbonate of ammonia every six hours until the return of cerebral action, and then give aperients and quinine. Good beef-tea well seasoned with spices and salt. Plenty of water and diluents. Port wine when the pulse will bear it.—(Mr. Grantham, p. 6.)

When the circulation requires it, give wine under all circumstances of derangement of the functions. Two drachms of ether in the form of injections every two hours, when swallowing is difficult. Blisters in succession over the surface every 6 hours, over chest, abdomen, thighs, and legs, as stimulants to excite the capillary system.—(Dr. Corrigan, p. 8.)

Ague.—Large doses of quinine (from 10 to 60 grains a-day) for four successive days, and intermitting it the six following days, thus embracing the interval comprehended in three fits; or,

A large dose of quinine as soon as a fit threatens or takes place, and then omitted till another paroxysm comes on. Doses,

from 15 to 30 grains each day, increased sometimes to 60 grains. (Dr. Graves, p. 1.)

Before giving quinine, relieve congestions of internal organs, which may occur even in anæmic subjects; and then give a large dose of quinine, followed by small doses, in order to keep up its stimulating or tonic effects on the capillaries. (Dr. R. Chambers, p. 3.)

Every sufficient dose of quinine or bark loses power by fractioning it, like a dose of wine; therefore give a large or full dose during or just after a fit, and also during the intermission: the second dose to be given on any day from the first to the sixth interval, then to be repeated after intervals of 7, 8, 9, 10, 12, 14, 16, 18, 22, and 30 days. Best time for the dose, immediately after a light dinner, and the first dose just after an attack. A dose, from 15 to 20 grains of sulphate of quinine, or 3 or 4 drachms of cinchona will keep off the fit for about eight days. (Bretonneau, p. 5.)

Scarlatina.—As soon as the efflorescence appears, and when the fauces are red, apply a solution of nitrate of silver to the inflamed parts in the throat (10 grains to the ounce); apply the camphor liniment combined with laudanum externally; and to a child of three years old, give half a drachm of diluted distilled vinegar, in syrup and water, every three hours; after fifteen years, give 2 drachms to a dose. The solution of nitrate of silver should be applied once or twice a day, by means of a bit of sponge at the end of a lead pencil. (Mr. Brown, p. 14.)

When there is dropsy, with albuminous urine after scarlatina, the epithelium separates from the mucous surface of the kidney, and there is a desquamation similar to that on the skin. Cutaneous action should be kept up until the renal secretion is restored, or all the consequences of Bright's disease may occur, and the patient die from the retention of urea in the system. It is in the mild forms that dangerous sequelæ are to be apprehended, the poison having been imperfectly, or not at all, eliminated through the skin. (Dr. Todd, p. 135.)

Cancer.—Use methodic compression, as recommended by Mr. Young. Apply perfectly smooth disks of agaric, laid over each other, and retained in situ by a roller. (Recamier.) Use a laminated plate of lead, modelled to the tumour, surmounted by graduated compresses. (M. Begin.) Dr. Arnott's plan of applying pressure by means of an air cushion and spring, is the best, as it makes equal and regular pressure on the tumour, and is applicable whenever a bony or other solid support exists behind the growth, where a point for counter pressure can be had, (p. 193.) Give the following internally: ℞. Arsenici iodureti, gr. j.; ext. conii, ℈ij.; M. in pil. xvi.; dividend. j. bis die s. Diet should be light and nutritious, and exercise moderate. (Dr. Walshe, p. 190.)

SCROFULA.—Give muriate of barytes in doses of from half a grain to three grains. When given to infants, add a syrup to diminish its irritant effects, and if there be spasm, combine it with some aromatic or antispasmodic. The following is a good formula: Muriate of barytes, muriate of iron, of each half a drachm; water distilled, syrup of orange peel, of each half an ounce. Or give half a grain of barytes in a tea-cupful of infusion of hop, or some bitter infusion, every morning fasting, gradually increasing the dose. Or give it in pill, (the best way) in doses of one-twelfth of a grain three times a day, increasing the frequency of the doses, rather than the quantity in each. Barytes does not supersede iodine in these cases, but sometimes iodine does no good, or it does good only to a certain point, and then proves noxious; it is here that barytes is of the greatest service. (Dr. Walshe, p. 197.)

Scrofulous Tumours.—Consecutive to inflammation and suppuration of the lymphatic glands, apply the following ointment: Oil of cod livers, 15 parts; liq. of subacetate of lead, 8 parts; yolk of egg, 12 parts: make into a homogeneous ointment.

Scrofulous Ophthalmia.—Smear the margins of the eylids with cod liver oil, twice or thrice a day, by means of a camel-hair brush, or feather. (Dr. Brefeld, p. 198.)

RHEUMATISM.—Give colchicum, but should the fever run very high, add bleeding and mercurial purgatives; if the pain be of a nervous character, give opium or morphia. The colchicum acts by eliminating morbid matter from the system. The urine becomes increased in quantity, or specific gravity, or both; there may be a sediment, or this may be eliminated as dissolved urea, and then there is no deposit. Continue the colchicum for a week or ten days after the pain has subsided, to get rid of rheumatic matter; combine it with a mild tonic, iodide of potassium, and a good diet. (Dr. Williams, p. 190.)

Acute.—Give one or two grains of opium every second or third hour, or ten, twelve, or more grains in the twenty-four hours. The opium is to be increased in dose, both as to frequency and quantity, until there is decided relief, and kept at that dose until the complaint is steadily subsiding.—(Corrigan.)

Bleed, once or twice, in the robust only, and give gr. v. to gr. x of calomel, with gr. iss. or gr. ij. of opium, every night, and a purgative next morning. Give also the following draught, three times a day:—vin. colchici, ♏x. ad. xx.; pulv. ipecac. co., gr. v.; mist. salini, ʒx.; syrupi, ʒj.; M. Between the second and fourth day, and sooner, if tenderness of the gums occurs, omit the calomel, and continue one grain of opium at bed-time, and in some cases at noon, as also the colchicum draught and morning senna purge. (Dr. Hope.)—When sore mouth supervenes, instead of continuing the opium, if there be not much pain left, give quinine and iodide of potassium. Disease of the heart is

rare under either Dr. Corrigan's or Dr. Hope's plan of treatment; if it does occur, give large and repeated doses of calomel and opium. If the disease become chronic, or the attendant fever is of a hectic character, give quinine or hydriodate of potash, in full doses. (Dr. Griffin, p. 186.)

Chronic.—Give the clear cod-liver oil, in doses of a tea-spoonful, and gradually augment the dose to a wine-glass full, night and morning. Do not give this oil where dyspeptic symptoms coexist. The best vehicle is a thin infusion of linseed, flavoured with lemon peel, and sweetened to please the palate. (Dr. Bradshaw, p. 188.)

Muscular.—"Fire" the parts with the instrument used by Dr. Corrigan. (See *Paralysis*, p. 42.)

Gouty Neuralgia.—This affection, often called sciatic gout from its seat, is cured by an attack of regular gout. Give a mild mercurial course, with salines, especially alkaline diuretics; occasional moderate detraction of blood, either generally or locally; a light and lowly animalized diet; and a most rigid abstinence from all fermented liquors, especially porter and ale. The clothing should be warm; and give colchicum. (Dr. Robertson.)

In gouty inflammation, apply leeches, and keep up a gentle oozing from the bites by warm fomentations; then keep the part covered and apply a lotion made of one part of spirit, three of camphor mixture, and a little vinegar. Give colchicum to stimulate and increase the secretion of the mucous membrane of the bowels and to eliminate lithic acid and other nitrogenized elements from the system. (Med. Chir. Reviewer, p. 181.)

Rheumatic Gout.—Mix phosphate of ammonia, say ℥ss., in ℥vi. of distilled water; and give half an ounce of this either combined with small doses of musk or not. It decomposes the insoluble lithate of soda supposed to exist in the blood, and forms two new soluble compounds, phosphate of soda and lithate of ammonia. Give it for a considerable time where thickening of the white tissues exits; it deprives the blood of the lithic acid and soda, and creates a demand for them, which leads to absorption of these elements from the tissues where they have been deposited. This remedy is not intended to supersede the use of the lancet, and other remedies in acute rheumatism. (Dr. Buckler, p. 176.)

AFFECTIONS OF THE NERVOUS SYSTEM.

TETANUS.

Traumatic.—Give large doses of tincture of aconite prepared according to Dr. Fleming's formula. Watch the case very attentively. Dr. Fleming would not exceed a second dose of 5 minims two hours after the first. In traumatic tetanus this will not be sufficient. Give 18 or 19 minims in eight hours; the second day increase the dose to 32 minims in fourteen hours; third day, 25

minims in seven hours; and fourth day, 20 minims in two hours. Watch these doses unceasingly, and diminish them according to circumstances. (Mr. Page, p. 48.)

Idiopathic.—Do not depend so much on stimulants, but support the strength on nutritious diet, such as animal jellies. Give opium in large doses with hydrocyanic acid: also a well sustained course of purgatives, as colocynth pills with castor oil; cupping over the spine; turpentine glysters. (Dr. Watson. p. 45.)

Try the hydropathic method of treatment. Envelope the patient in a cold wet sheet, over this, place three or four good blankets; keep the patient in this condition for an hour, by which time the temperature of the sheet will probably be 100°. Then remove the coverings, and plunge the patient into a cold bath; rub him quite dry and envelope him again in blankets for six hours. Repeat this operation if the symptoms do not abate. (Mr. Preshaw, p. 48.)

Hydrophobia.—Employ large doses of the tincture of aconite, as recommended in traumatic tetanus. (See *Tetanus, Traumatic.*)

Delirium Tremens.—Give opium and emetic tartar. Antim. potass. tart. gr. iv.; tinctura opii, ʒij.; mist. camphoræ, ℥viij. Mix, and give two table spoonfuls for first dose, and one every half-hour afterwards, until delirium abates or drowsiness comes on. (Dr. Graves, p. 97.)

When morphia and other narcotics fail, and the case is extreme, blister the back between the scapulæ, peel off the cuticle to the extent of three inches by two, and cover the part over with a layer of pure extract of belladonna. Within ten minutes there may be twitchings of the facial muscles, intoxication, pupils dilated, and drowsiness: immediately remove the belladonna, or even sooner. (Mr. Flood, p. 20.)

Asthenic Form.—The object is to support the strength and allay irritation. Give stimulants and opium. The attack has come on gradually, and the patient has lived on stimulants, without proper food; the system is impoverished, Give broth and nutritious diet, with moderate quantities of good wine, and full doses of opium.

Sthenic Form.—The patient has been intemperate for a short time only, (during an election, &c.); he is otherwise robust: the case borders on inflammation. Do not give opium: apply leeches to the epigastrium or head; cold lotions. Do not *commence* by stimulating, nor by giving narcotics; although one or both of these methods may be ultimately required. (Dr. Corrigan, p. 22.)

Mania (*Mental Excitement.*)—In cases with great action or excitement without power, the great object is to subdue the cerebral excitement by procuring sleep. For this reason give occasionally tinct. hyosciam. ♏ 30; tinct. humuli, ʒij.; camphor. gr. v. to x. Or, relieve visceral congestion by leeches to the rectum; or

give a full dose of opium. In anæmic cases, it is often necessary to give a stimulant, or good nutritious food before a narcotic. A combination of opium and tartar emetic; or calomel and opium; or the infusion of opium with a bitter; or the hydrochlorate of morphia; or an opiate enema, may be tried. Rub three or four teaspoonfuls of laudanum over the stomach; or rub the shaved head with liniment. camph. fort. combined with opium.

Apply a blister to the back, peel off a small portion of the cuticle, and apply the pure extract of belladonna for nine or ten minutes. (See *Delirium Tremens.*) When mania is *periodic*, give arsenic, tinct. ferri sesquichlor., zinc, copper, or tonics. Arsenic seems to alter the sensibility of the brain. It is, perhaps, better to keep the head regularly cold than to apply the douche. (Dr. J. Williams, p. 15.)

Puerperal.—Give opium and tartar emetic, as recommended in the treatment of delirium tremens. (Dr. Graves, p. 97,)

Paralysis.—In cases where there is no organic lesion in the central organs, "*fire*" the patient every day, if permissible, along the spine, thighs, and legs, or other parts. *Mode of Application.*—"The iron consists of a thick iron wire shank, two inches long, inserted in a small wooden handle, having on its extremity, which is slightly curved, a disc or button of iron, a quarter of an inch thick, and half an inch in diameter. The face of the disc is flat, not spherical, like the French ones." Hold the button over the flame of a small spirit lamp, keeping the forefinger about half an inch from the heated button. As soon as the finger feels uncomfortably hot, withdraw the button, and apply it as quickly and lightly as possible, at intervals of half an inch over the whole of the affected part, bringing the flat surface of the disc fairly in contact with the skin. A whole limb, or the back may thus be fired in a hundred places, if necessary, in one minute. By looking sideways at the spots, the skin should look first of a glistening white, and, in a short time, of a bright red. (Dr. Corrigan, p. 42.)

When there is no organic lesion, but only a want of nervous energy, in cases of *local* and not *general* paralysis, as when a single muscle or a certain class of muscles are affected, as by the action of lead, make use of magnetic electricity. (Dr. Neligan, p. 39.

In cases depending upon cold, poisons, molecular changes, in the brain and nerves, give strychnine in doses from one-eighth to a quarter of a grain three times a-day. Do not exceed three-quarters of a grain three times a-day, and cease on the appearance of poisonous effects. (Dr. Favell, p. 41.)

Epilepsy.—One great difference between epilepsy and apoplexy is, that in the former the respiratory movements are even more active, impeded, indeed, by the spasm of the glottis which often exists, whereas in apoplexy respiration is impaired; hence the coma of apoplexy is more dangerous: not so with epilepsy, in

which respiration is even exalted. This may be owing to the circulation through the cerebrum being impeded, and, by means of the circle of Willis, diverted to the medulla oblongata; hence the exaltation of the medullary functions in hysteria, epilepsy, &c. Hence also the greater liability to convulsions during sleep, the superior hypnotic influence of moderate doses of opium, which exalt the medullary while they impair the cerebral functions, and the wakefulness caused by prussic acid, which impairs the medullary functions. The great object of treatment is to *equalize the circulation;* not to allow one part to monopolize the blood at the expense of another. Bleeding is very exceptionable, as the cases often occur in anæmic subjects. Improve the vigour of the circulation, and even increase the quantity of blood. Apply cold to the head and spine, and heat to other parts; purge, give diuretics, counter-irritate. Advise regular exercise, warm clothing. Subdue the action of the heart by hydrocyanic acid, digitalis, henbane, valerian. Improve the general *tone* of the system; give nitrate of silver, zinc, copper, chalybeates, mineral acids, bark, quinine. Perhaps the best is the muriated tincture of iron. (Dr. C. J. B. Williams, p. 33.)

Apoplexy.—When caused by *intravascular congestion*, plethora, or hyperæmia, deplete: when caused by *extravascular effusion*, the system is under the influence of shock, and does not bear depletion well. How shall we know the latter case? *Vertigo* is a good characteristic, coming on in the act of stooping, sudden change of position, &c. But the best plan is to *feel our way* by a small blood-letting, and watch the effect. When caused by *hyperæmia* or inanition, restore the equilibrium of the circulation by good diet, and improving the health; quinine, iron. In this case the relief from depletion is transitory. (Dr. M. Hall, p. 30.)

Neuralgia.—"Fire" the parts affected, and do it repeatedly, if necessary. (Dr. Corrigan, p. 42, see *Paralysis.*)

Give three grains of sulphate of quinine, with one-eighth of a grain of sulphate of morphia, an hour before each expected attack, and then give five drops of tincture of Indian hemp three times a day, and rub some cajeput oil on the part affected. Continue the quinine three times a day, and increase the Indian hemp to seven and ten drops three times a day till relieved. (Mr. Hargrave, p. 55.)

Give colchicum, either alone, or combined with other remedies, especially in cardiac neuralgia; and in this case, apply the tobacco leaf externally over the seat of pain: it should be slightly moistened, and removed on any symptoms of giddiness or sinking appearing. (Dr. Fife, p. 60.)

Make a liniment with one drachm of tincture of aconite of of the shops, and seven drachms of fresh palm oil, or with two ounces of camphor liniment. Rub half a drachm or a drachm of the former, or double the quantity of the latter, into the part af-

fected, twice or thrice a day, according to its effects. It must be watched attentively, as the medicine is *cumulative*. If its poisonous effects appear, give a stimulant, as wine, or get the patient into the fresh air. (Mr. Kirby, p. 55.)

[See Retrospect, Vol. XII., Art. 9, for Dr. Fleming's interesting paper on this medicine; and for his formula for the preparation of his tincture of aconite, see the same article, page 40.]

Facial. (*Orbital.*)—Give half a grain of valerianate of zinc every eight hours, combined with two grains of extract of hyosciamus. Follow this with gentle purgatives. (Dr. Bell, p. 52.)

Periodic.—Give large doses of sulphate of quinine, from a scruple to half a drachm daily. Combine it if necessary with Fowler's solution of arsenic; but omit the arsenic unless unsuccessful with quinine and other remedies. (Sir B. Brodie, p. 51.)

When the sulphate of quinine fails, give the tannate of quinine in the same doses as the sulphate. (Dr. Hauff, p. 55.)

Sciatica.—Apply a blister to the hip, peel off the cuticle and dress the part twice a day with one grain of hydrochlorate of morphia. Repeat the blister and morphia when necessary. Give also, three times a day, two ounces of guaiacum mixture, with 40 minims, or one drachm of the tincture of guaiacum; and apply some stimulating liniment. If these fail, try the internal use of turpentine. (Dr. Taylor, p. 50.)

"Fire" the parts along the course of pain, and, also, if necessary, across the loins. Do it repeatedly if requisite. (Dr. Corrigan, p. 42, see *Paralysis*.)

AFFECTIONS OF THE CIRCULATORY SYSTEM.

Anæmia.—Improve the general health and strength, and the quantity and quality of the blood. *Iron* forms the chief part of the hæmatosin which is contained within the external envelope of the red globules; therefore, this is one of the most important medicines by which to increase the quantity of the globules. It is better to give iron in small quantities for a long time, than in large doses for a short time. The first organ to be attended to will often be the stomach and digestive organs. If the stomach will bear it, begin with mist. ferri. co., or with tinct. ferri. sesquichlor., in a bitter infusion; or give the sulphate of iron combined with ext. gent., or with ext. hyosciam., and a little aloes or rhubarb. When there is œdema, combine the potassio-tartrate of iron, with bitartrate of potass. The iodide of iron is also an excellent preparation. Sometimes iron cannot be borne at first: in this case give the bitter infusions, or, if the stomach be irritable and neuralgic, give hydrocyanic acid, with a little muriate of morphia, or the oxide of silver: in this case a belladonna plaster over the stomach, and even one-third of a grain of extract of

belladonna, three times a day, may be tried. It is impossible to anticipate all the symptoms which appear in anæmia; the case must be treated accordingly. (Dr. Turnbull, p. 61.)

HEART.—(*Functional Diseases.*)—*Palpitation.*—Owing, 1st. to a distended stomach; and thus interfering with the descent of the diaphragm, and confining the heart's motions: 2nd. a distended colon pressing on the aorta, causing fulness of blood on the left side of the heart: 3rd. a distended stomach and colon pressing on the ascending cava, and causing a deficiency of blood on the right side of the heart: 4th. hepatic disease. Each of these states will require its particular treatment. (Dr. Bellingham, p. 71.)

ANEURISM.—(*Compression in the Treatment of.*)—Such an amount of compression is not necessary as to cause inflammation and adhesion of the opposed surfaces of the vessel, nor should the circulation in the artery at the point where it is compressed be entirely intercepted. To apply it successfully, the velocity of the current should be diminished, and the amount of blood in the sac be diminished, so as to encourage the deposition of fibrine, until the sac is quite filled. It has this advantage over the cure of aneurism by ligature, that the artery is obliterated at the seat of the aneurism, by which the chances of gangrene are diminished. The cure is also more effectual, as the sac and also the artery leading from it, become *filled* with fibrine, whereas, after ligature, a loose coagulum remains which does not fill the sac. (Dr. Bellingham, p. 250.)

It is not unfrequently found that the artery and its accompanying vein have become adherent, which is a great source of embarrassment to the operator, when tying the artery; this is avoided by adopting the treatment by *compression*. A moderate degree of pressure is all that is necessary throughout, so as not entirely to intercept the current of blood through the vessel. (Dr. Porter, p. 253.)

Aneurism by Anastomosis, or Nævus Maternus.—Tie the tributary arteries in the neigbourhood, (Pelletan, Wadrop, Dr. Mc'Lauchlan.)—Tie the arteries supplying the tumour, and then remove it by knife, securing the bleeding vessels with ligatures. (Syme.) —Cut off the supply of blood to the tumour by making incisions around it, secure the bleeding vessels, and place pledgets of lint between the cut surfaces to prevent union taking place. (Dr. Gibson.)—Use galvano-puncture for ten minutes at a time, with 15 pairs of plates. The pins introduced into the tumour should be numerous, and should cross each other at right angles; apply ice after the operation. (Dr. Petrequin.)

NÆVI.—Apply lint, steeped in liq. plumbi, or solution of alum, and *strap* it over the part with a bandage; wet the lint without removing it, and keep it so applied for several weeks. Should this fail, cut out the tumour, if no larger than a crown piece, and close the edges of the wound by twisted suture. (p. 279.)

Subclavian Artery.—(*Ligature of*).—When there is extensive swelling and suppuration, after the lesion of an artery, it is not advisable to cut down upon it, to tie it at the seat of injury; and when this is the case after wound of the subclavian, it is better to secure the artery beneath the scalenus, before it approaches the tubercle of the rib; it is much higher and more accessible there. (Dr. Warren, p. 267.)

Posterior Tibial Artery.—(*Wound and Ligature of*).—Take the wound as a centre, and cut down upon the vessel, and tie it both above and below the seat of injury. (Arnott.)—If it be a case of secondary hæmorrhage, and there is a good deal of coagulum in the parts surrounding the vessel, it will be advisable to tie the femoral artery. When there is a wound in the calf of the leg, with sufficient bleeding to warrant a belief that the posterior tibial artery is wounded, separate the soleus from its attachment to the tibia, cutting through the deep fascia, and secure the vessel. (Mr. B. B. Cooper, p. 260.)

Hæmorrhagic Diathesis.—Apply to the bleeding part pads soaked in acetate of lead mixture, and cover it also with pulverized matico. Give the following mixture: ℞. Plumbi super. acet. ʒss.; acid acet. dil. ℥ss.; syr. rhœad. ℥ss.; aquæ ℥v. M. sumat cochl. ij. magn. omn. tertia hora. If the acetate of lead begins to affect the system, substitute for it the sulphate of soda. You must rely upon constitutional treatment. (Dr. Clay, p. 283.)

Epistaxis.—Give the oxide of silver internally. (Mr. B. Lane, p. 107.)

AFFECTIONS OF THE RESPIRATORY SYSTEM.

Bronchitis.—(*In Infants.*)—If very severe make use of the warm bath, and give one grain of calomel and two of ipecacuanha with a little compound tragacanth powder, every four hours; if less severe, three times a day, and lengthen the period as improvement takes place. After the first or second dose, the ipecacuanha does not act as an emetic. When necessary to apply a blister to an infant, place a piece of tissue paper between it and the skin, or dip a piece of blotting paper into acetum cantharidis; apply it to the part, and in ten or fifteen minutes you will have a blister. (Mr. Miller, p. 86.)

Chronic or Subacute.—Cause the patient to inhale the fumes of ammonia. (p. 90.)

Pneumonia.—(*Chronic.*)—Cause the patient to inhale the fumes of ammonia, in order to stimulate the parts. (p. 90.)

Asthma.—Dip a charpie-pencil into pure liquid ammonia and then into water, and apply it to the velum, uvula, and upper part of the œsophagus. Do not let it remain too long in contact with

the soft parts, nor carry it too deeply into the throat; where there is emphysema, one application will be sufficient. The absorption of ammonia by the stomach will probably produce the same result, if given in sufficiently large doses, or its inhalation when diffused in the atmospheric air. (M. Guerard, p. 88.)

APHONIA. (*Loss of Voice.*)—Inhalation of fumes of pure ammonia. (p. 90.)

ASPHYXIA.—Use cold affusion, and when respiration is fully established, open a vein. (Mr. Noyce, p. 289.) Cause the patient to inhale the fumes of pure ammonia. (p. 90.)

ŒDEMA. (*Of the Glottis.*)—When suffocation threatens, perform the operation of laryngotomy. (Mr. Crookes, p. 288.)

TRACHEOTOMY.—In children: lay hold of the trachea with a hook, and, having drawn it forwards, cut out a portion with a pair of scissors; or use Mr. Millikin's instrument, by which you can both fix and hook the trachea, and then cut out a circular portion from the cartilaginous rings. Mr. Read's improved instrument is a very good one; the cutting part forms a curve or obtuse angle with the handle. (Mr. Carmichael, p. 286.)

Perform the operation early. If you cannot avoid the thyroid veins, cut straight through them; the hæmorrhage ceases on the introduction of the canula. If the case be not very urgent, keep the edges of the wound apart by some instrument, for a short time before introducing the canula, in order to allow of false membranes being expelled. You may expedite this by dropping water into the bronchi, and sponging the trachea. If the canula become obstructed, remove it immediately and empty it, and when the canula is withdrawn introduce the dilator. After the fourth or fifth day diminish the size of the canula, and by the thirtieth day, it may be dispensed with. Drop into the air passages, fifteen or twenty drops of a solution of nitrate of silver (gr. v. to ℥j.), and cleanse the trachea with a sponge dipped in the same solution. (Trousseau, p. 287.)

PARACENTESIS THORACIS.—Do not allow air to be admitted through the canula if it can be avoided. It may re-kindle inflammation, or convert the adhesive into the suppurative inflammation. Unless the lung is capable of free and full expansion, do not attempt to draw off *all* the fluid: remove only so much as the expanding lung and the surrounding compressed organs are capable of replacing. Watch the opening carefully, especially during inspiration and coughing, and when the stream begins to fail, turn the patient on his punctured side till there is an alternate flow and stoppage of the stream during inspiration and expiration, then immediately withdraw the canula. Apply a flannel bandage with moderate firmness around the chest. *Precautions.*—1. Always introduce an exploring needle first, to know if the diagnosis be correct. 2. Do not puncture one side before it is presumed that the other is sound enough to carry on respiration.

3. Draw off the fluid slowly through as small a canula as the density of the fluid will admit. 4. Only draw off the fluid till air seems to threaten to be admitted. (Dr. Hughes, p. 83.)

AFFECTIONS OF THE ALIMENTARY CANAL.

Hare Lip. (*Operation for.*)—Make the incision from above downwards, nearly as far as the red margin of the lip, and stop before you have detached the cut piece; then direct the incision at a right angle towards the median line. Do the same on the opposite side, and then unite the two margins in their whole extent, except towards their free borders: the flaps formed by directing the incisions towards the median line are to be approximated. (Mr. Smith.)—If the child be strong and healthy, and the fissure only affects the lip and not the bones, the operation should be performed a few days after birth. (Dubois.)—When the features are enlarged, there is more ground to work upon, therefore defer it until the first set of teeth have appeared. (Liston, p. 290.)

Frænum Linguæ (*New Instrument for dividing.*)—This resembles a pair of scissors; its blades are perfectly blunt and curved, and do not close completely, thus leaving an interval for the reception of the frænum. (Dr. Beatty, p. 298.)

Cleft Palate and Staphyloraphy.—Dissect the soft tissues from each side of the fissure in the palate, to such an extent as to make a flap broad enough to join its fellow of the opposite side in the mesial line, and stitch the whole between the uvula and the anterior extremity. Reunion to a considerable extent, takes place, and towards the inner margin of the bones, and also on the upper surface of the soft portion in the middle, there will be a cicatrix analogous to mucous membrane. (Warren.)

The soft velum ought to remain in a state of perfect repose, and for this purpose the levator palati, the palato pharyngeus, and the palato-glossus muscles should be divided. This cuts off all motor influence in an outward, upward, or downward direction. For this purpose use a knife with a blade like the point of a lancet, the cutting edge being about a quarter of an inch in extent, and the flat surface being bent semi-circularly. Make an incision half an inch long on each side of the posterior nares, and divide the levator palati muscle on both sides, just above its attachments to the palate; then pare the edges of the fissure, and with a pair of long blunt-pointed curved scissors, divide the posterior pillar of the fauces, and, if it seems necessary, the anterior pillar too, the wound in each part being a quarter of an inch in extent; then introduce stitches by means of a curved needle set in a handle, the threads being tied so as to keep the cut edge of the fissure in exact contact. The first incision, that for the division of the levator palati, should be made midway between the

hard palate and the posterior margin of the soft flap, just above the thickest and most prominent part of the margin of the cleft. You may commence cutting either at the end nearest you, as you stand behind the patient, or that furthest off, as may seem most convenient. For ligatures, those of stout silk, or flaxen thread, are the best; and it is of great importance that a stitch be used close to the lower end of the uvula, as there is a great tendency to separation there. The after-treatment the same as after ordinary operations, except that the parts are to be kept at rest as much as possible, and nutriment to be given by means of enemata of gruel and soups. (Mr. Fergusson, p. 291.)

PALATE.—(*Operations on.*)—In cases of small holes in the soft or hard palate, pencil their borders several times a-day with a concentrated tincture of cantharides. Inflammation and granulation come on and close the opening. Large openings are to be closed by suture, after paring the edges; and leaden wire is said to be preferable to silk, for ligatures, as it keeps the edges close together, and does not cut through the textures.

When there is adhesion between the velum palati and posterior wall of the pharynx occasioning deafness, and stopping the communication between the nares and air-passages, the adhesion must be divided transversely, by means of a long scalpel, about half an inch below the adherent border of the velum. The edge must be fixed by a hook, and drawn from the wall of the pharynx, then with a lancet-formed knife, the surface of which is curved, directed upwards, the velum is to be loosened, and the separation completed by scissors, also curved upon their flat surface. The upper adhesions are to be destroyed by passing a blunt curved iron instrument, like a very small spatula, along the inferior nares. Next prepare a ligature with a small curved needle at each end; with one of the needles transfix the velum, a few lines from its edge, and bring it out at a high point on the anterior surface of the palate; the other needle must be used in same manner, a short distance from the side of the other; and the edge of the velum must be brought about half an inch from the palate. All mechanical means for closing the fissured palate, are not only injurious but dangerous; but if the size of the cleft, or other circumstances, render an operation unadvisable, then it may be covered with a gold plate, fixed to the teeth. In cases of holes in the palate, the edges of which are so callous that an operation would be unsuccessful, the opening may be stopped by wearing a double piece of indian rubber, without fear of its being enlarged, Two pieces of indian rubber, the thickness of pasteboard, are cut about four or five times larger than the opening, and between them a small round piece, and they are to be transfixed by waxed thread: thus, one plate lies on the anterior, the other on the posterior side of the palate, and the small middle strip in the opening. The patient can apply it himself, and it should be taken out to be cleaned once a week. (Dieffenbach, p. 296.)

Cynanche.—Make free incisions, varying them in depth and extent according to the case, in the following manner: Take a long-handled round-pointed scalpel, and having covered the blade with adhesive plaster to within three-quarters of an inch of the point, firmly press down the root of the tongue with the index-finger of the left hand, and make one or more free incisions in a direction upwards and outwards along the tonsil and velum to the base of the uvula. The throat to be gargled with warm water to encourage the bleeding; in other respects gargles are useless, since they cause motion in parts which ought to be kept at rest. Dr. Makin, p. 90.)

Bowels. (*Acute inflammation of*).—Where local or general depletion has been used, or where they cannot be resorted to, give two grains of opium, and then one-grain doses every two hours, until about 32 grains have been taken; watch the state of the bladder, and open the bowels with mild purgatives, combined with henbane. If the enteritis be intense, deplete; and should the system resist opium, give calomel, but substitute opium for it as soon as the symptoms give way. Do not give it in small doses, for then it checks the diarrhœa, but does not relieve the inflammation. If dysentery exists, combine it with ipecacuanha. (Dr. Griffin, p. 94.)

Dyspepsia.—When dependent on or complicated with a hyperhæmatic or sub-inflammatory condition of the mucous membrane, direct the use of herbaceous aliment, as grapes, apples, strawberries, pomegranates, &c.; give them about an hour before breakfast, and in the intervals of meals. Should flatulence and fæcal accumulation arise, treat the former with soda and ginger, and the latter with a pill of aloes, capsicum, and quinine. (Dr. Dick, p. 97.) Or, give oxide of silver in half-grain doses twice a day, in conjunction with aperients and alteratives. In *gastralgia*, oxide of silver acts well as a sedative.

Pyrosis.—Give half-grain doses of oxide of silver in a pill, twice a day; where there is deep-seated pain, apply leeches to the epigastrium first. (Mr. Butler Lane, p. 112.)

Constipation.—Where there is no recognized stricture, strangulated hernia, or abdominal tumours, make use of an oleaginous enema, to five pints of which add an ounce of sulphate of magnesia, and a table-spoonful of common salt. In giving the injection, let the patient lie on his right side, with the pelvis considerably elevated; it should be administered very slowly, so that the intestine may be filled before it is distended, and when it contracts may force away the feculent matter mechanically. Use well-boiled oatmeal gruel with common salt and butter. (Dr. Hall, p. 99.)

When it arises from obstruction near the junction of the ileum with the cœcum, inject air into the bowels. (Dr. Todd, p. 166.)

When dependent on indolence of the bowels, warm water injections are injurious. Give a pill containing one-fifth of a grain

of the extract of nux vomica every morning; it acts by rousing the contractile power of the intestine. It is particularly of service to the paralytic, or where the muscular tone of the intestine is lost by over-distension.—Injections of catechu, krameria, and alum are useful, as they corrugate the muscular fibres of the bowels, and diminish the size of the pouches which may be formed in the intestines by accumulated fæces, particularly that in the rectum just above the sphincter. These astringent injections may be varied; they may be made of the red rose, krameria, oak bark, bistorta, catechu, alum, rhatany, nux vomica, &c. They should only be small, 10 or 12 ounces and not retained many minutes, so that the muscular fibres may readily contract. —Or, introduce tents into the rectum, (Fleury.) Or, champoo it, (Recamier.) Or, give ox-gall; as auxiliaries, add drinks of vegetable bitters, a tonic diet, and exercise in the open air. (Dr. Teissier, p. 102.)

Constipation during Pregnancy.—Inject into the rectum a drachm of the inspissated ox-gall, dissolved in a pint of warm water. (Dr. Allnatt.) This may be repeated every four hours until relief is produced. (Dr. Aldis, p. 105.)

Diarrhœa. (*Chronic.*)—Give half-grain doses of oxide of silver, twice a day. (Mr. Butler Lane, p. 107.)

Diarrhœa in Young Infants.—Give castor oil with yolk of egg, and if necessary, add an opiate. Prescribe as follows for an infant of from two to four months old: ℞. Ol. ricini, ʒj. to ʒiss.; vitelli ovi semis; aq. aneth. feneculi, a. a. ℥j. ft. emuls. sumat coch. parv. bis die. From two to six drops of laudanum may be added, but this, as well as its amount and frequency, must vary with the case. (Dr. Thomson, p. 108.)

Hernia.—(*Radical cure of.*)—The means to be used are, excision of the testicle, incision of the sac, excision suture, and cauterization of the sac, ligature of the sac after incision of the integuments, acupuncturation, and insertion of gold-beater's skin in the sac. These means, however, do not prevent a fresh hernial descent, although they destroy the sac. The best means for procuring closure of the hernial aperture, are *trusses*, ligature of the sac, and its envelopes, and the cutaneous plug. Trusses should not press too powerfully on the abdominal parietes, or they may produce inflammation or irritation of the parts, or the walls of the abdomen may become atrophied; or if the pad be very small and convex it may produce elongation of the aponeurosis and muscle, and thus weakens the parts. The operation by ligature is attended with considerable pain, and even loss of life. There are two ways of introducing the cutaneous plug—the first, to detach a piece of integument from the neighbourhood of the ring, and introduce it into the aperture: the second is effected by drawing the loose scrotal integument into the inguinal canal, and to cause adhesive inflammation between the invaginated integu-

ment and the walls of the canal. M. Gerdy retains the invaginated integuments in situ by one or more sutures. Mr. B. Cooper in performing M. Gerdy's operation, stitched the invaginated skin to the tendon of the external oblique muscle, and brought out the needle an inch and a half above Poupart's ligament; the needle was again passed into the canal, and brought out through the abdominal parietes as before, about four lines distant, and the skin between the two ends of the ligature was thus included and tied over a piece of bougie. (Mr. Teale, p. 301.)

Strangulated.—In order to determine whether the intestine be still living or not, wait a few moments after dividing the stricture, and see whether the discolouration becomes less intense; or press the blood out of the distended veins and see if they become rapidly refilled, If no evidence of circulation exist, cover the intestine with integuments, or with a moist sponge, and wait a little while; the surface of the intestine may then be carefully and slightly scarified with the point of a lancet, and perhaps a slight oozing of blood will take place, if so, however discoloured it may be, the intestines may be returned into the abdomen. Carefully press out the contents of the intestine and then replace it in successive portions; then pass the finger within the abdomen to determine that no portion of the intestine is engaged within the sac, and also to determine that the protruded knuckle of the intestine is not invaginated within a neighbouring portion of the intestinal canal. When *gangrene* has taken place, and is general, make an incision throug the whole length of the gangrenous portion, and leave it to slough away. This opening allows the contents of the upper part of the canal to pass away; but if this does not take place without dividing the stricture, this must be done with as little disturbance as possible. The wound must be left open, to facilitate the free discharge of matters, and simply dressed with wet linen, frequently renewed. Mr. Travers does not recommend division but dilatation of the stricture. Sir A. Cooper divided the stricture generally. Mr. Key also advises it. Brasdor's practice of excising the gangrenous parts and uniting the divided extremities by suture is universally abandoned. Recent adhesions, if there be no gangrene, are to be destroyed by the finger or handle of a scalpel—adhesions of two coils of intestine is also to be treated in this way. (Mr. Teale, p. 304.)

It is recommended by some practitioners as Mr. Key, &c. to return the bowel without cutting into the sac, as there is less danger of peritoneal inflammation afterwards. The objection to this practice is the possible gangrenous condition of the bowel, many of the symptoms of which are equivocal, so that it is the best practice, after all, to open the sac. The great mortality attending these operations has been increased by improper after treatment, as the early exhibition of purgatives. (Mr. South, p. 307.)

Enterotomy after operation for Strangulated Hernia.—It sometimes happens that after the operation for strangulated hernia, and after the intestine has been returned, symptoms of strangulation remain; the part of the intestine is incapable of resuming its functions, and tympanitis comes on. Separate the edges of the incision, pass the finger into the abdomen, find the distended coil of bowel, seize it with a pair of forceps, and by means of probe-pointed scissors, make an opening into it, through which the contents of the intestinal canal may escape; many a life may be saved by these means. (M. Maissoneuve, p. 310.)

Anus.—(*Artificial.*)—After the bowel has been strangulated so long that gangrene of a portion has taken place, and an artificial anus is formed, either by the knife or by sloughing, and the stools are passed out of the opening, try the very ingenious method adopted by Mr. Trant, of Dublin; which consists of introducing a small silver tube (made by Mr. Millikin, of Dublin), and pressing back the intermediate portion of the intestine lying between the abdominal and anal position of the artificial opening, and thus bring the parts into such relation that the stools can pass into the natural channel. In this way the opening may be gradually closed, and the functions of the part restored to the normal state. (Mr. Trant, p. 321.)

Fistula in Ano.—Pass a ligature through the fistula bringing it out at the anus and gradually tightening it upon the included part, use a catheter wire, about as thick as small twine. (Dr. Colvan, p. 320.)

Hæmorrhoids.—Where the case is recent, and the protruded piles not large, the bleeding small, and the constitution not affected, give a few grains of blue pill and rhubarb at night, and a little infus. rosæ and epsom salts in the morning, for a few days; after which give the ordinary electuary of senna, sulphur, cream of tartar, and mel rosæ, or what is better treacle, as the mel rosæ often gripes. Also inject into the rectum a pint of cold water with a drachm of nitre dissolved in it; enjoin steady exercise, and moderation in diet. In thin delicate subjects, give tonics, particularly mist. ferri aromatica; and if there be any serious organic mischief, particularly of the chest, interfere with the piles as little as possible. When the patient is becoming debilitated from the pain and irritation, as well as from bleeding, then remove the protruded hæmorrhoidal portions of the bowel, having secured them by ligature. (Mr. Hamilton, p. 315.)

Internal Bleeding Hæmorrhoids. Inject after every alvine evacuation, solution of acetate of lead ʒj, to ℥viij of distilled water; use two ounces of the solution for each injection; give an occasional blue pill, followed by a dose of castor oil and extract of taraxacum. To remedy the constipation usual in these cases, give the following confection: Common resin, well powdered, one ounce; clarified honey, five ounces; half an ounce of balsam of

copaiba renders it more efficacious, but is apt to disagree with the stomach. (Dr. Watson, New York, p. 315.)

Liver. (*Congestion of.*)—In diminished secretion, with pale or white stools, give mercury. In excessive secretion: increase the amount of oxygen inspired, and thus, during respiration there will be consumed materials that would otherwise be left for the liver to excrete; for while the carbon of the lungs is united to oxygen, and excreted in a non-combustible state, the carbon of the liver is non-oxygenized, is still combustible, and is intended, not for excretion, but absorption. Limit the supply of food which contributes to form bile, as spirituous liquors, butter, cream, fat, sugar, &c. The patient ought not to sleep immediately after a full meal, nor take suppers. (Dr. Budd, p. 109.)

AFFECTIONS OF THE URINARY ORGANS.

Urinary Deposits.

Apparatus.—A microscope, with a power of 300 diameters; test glasses; phials containing nitric and acetic acids, water of ammonia, and potash; some slips of blue and reddened litmus paper, and an urinometer.

Diagnosis.—Notice whether it be colourless, amber, saffron, red, &c., transparent or turbid; ascertain by litmus paper whether it be acid, alkaline, or neutral; note its specific gravity; set it aside to see if it deposit a sediment, or throw up a cream to the surface, or crystallise on the sides of the vessel. The urine should be recent, and if the patient have leucorrhœa or be menstruating, should be drawn off by a catheter; take care to have the vessel clean.

Urates are in excess when the urine is acid, deposits on cooling a red, pink, buff-coloured, or white precipitate, covering the bottom of the vessel with an even powdery deposit, usually copious, and dissolving by heat; viewed by the microscope, a powdery appearance; dissolved in nitric acid by a gentle heat, evaporated to dryness, and held over the fumes of ammonia, murexide of a beautiful red colour is formed.

Uric Acid. Urine highly acid, and deposits on cooling a red, pink, or buff-coloured sediment, adhering to the sides of the vessel in hard crystalline grains, having the appearance by the microscope of diamond-shaped plates or prisms; the precipitate is generally scanty; forms murexide the same as the urates, with nitric acid and ammonia.

When urine is acid, alkaline, or neutral, but turbid on emission, and deposits a white or yellowish sediment, and is not rendered transparent by heat, there will be present, phosphates, oxalate of lime, cystine, mucus, pus, or blood; if the

Phosphates, it is rendered transparent by acetic acid; the earthy phosphates appear as amorphous powders by the microscope, the ammoniaco-magnesian, as triangular prisms.

Oxalate of Lime. Not affected by acetic acid or ammonia, but rendered transparent by nitric acid; deposit when viewed by the microscope consists of octohedral crystals.

Cystine. Rendered transparent by solution of ammonia; viewed by the microscope it consists of five-sided plates, clouded in the centres.

Pus or Mucus. The sediment is whitish, and not dissolved by any of these agents; viewed by the microscope it consists of minute irregular spherical bodies, with granulated surfaces.

Blood. Sediment red, and not dissolved by nitric acid, heat, or acetic acid; by the microscope it consists of minute yellowish bodies, the shape of a shilling.

The dissolved constituents in diseased states of the urine, are:

Bile. To detect it, drop the urine and nitric acid a short distance from it on a plate of glass; as they meet examine them with an achromatic microscope, and if bile be present, a green colour will be produced.

Albumen. Sp gr. 1,014, or lower; heat coagulates the albumen, and this cannot be redissolved by nitric acid; nitric acid coagulates the albumen.

Sugar. Sp. gr. 1,025, or above; taste sweet; boil the suspected urine with an equal bulk of water of potash, if sugar be present the liquid will assume a deep porter or beer colour.

TREATMENT:

Lithic Acid deposits.—Give gr. x. or ℈j. of bicarbonate of potash or soda, three times a day, and if the deposit be in the form of rhombic prisms, indicating gout, give colchicum, using local antiphlogistic measures, if the urine be sanguinolent or albuminous, and there be pain in the loins. If the deposit be amorphous, there is either excessive secretion of the solid constituents of the urine, or a deficiency in the secretion of water. In the former case, the sp. gr. is increased in proportion to the quantity; give iodide of potassium three times a day in doses of 5 or 10 grs. In the latter, the quantity of urine is decreased, there will be fever either idiopathic or symptomatic, which must be removed, or dyspepsia, in this case give a scruple of alum three times a day in half a pint of water. If the sediment have a pink colour, attend to the biliary functions.

Weakly Acid or neutral urine.—This shews that the kidneys are inflamed. If acutely, use general and local depletion, and exhibit emollients and contra-stimulants; give ℈j. doses of iodide of potassium. If the inflammation be chronic, use local depletion and counter irritation, setons are very useful; occurring during typhus, apply blisters to the loins, and give wine.

Oxalate of Lime deposits.—At first give tonics, the mineral acids, vegetable bitters, astringents, &c.; and after some time give alkalies largely diluted. Alternate these plans, and persist steadily in their use. The following is a good tonic in these cases:—infus. cascarill. ℥vj.; potass. nitrat. ʒj.; acid. nitrici dil. ʒiss.; tinct. opii ʒj. M. sumat cochl. duo ampla ter in die.

Albuminous Urine.—Use active depletion, both local and general; give nauseating doses of tartar emetic, and hydrogogue purgatives; use the warm bath; give alkalies. Persevere in this treatment, but should the strength fail, and a cachectic state come on, depend on active counter-irritation, especially by setons. (Dr. Aldridge, p. 149.)

Albuminous urine after Scarlatina—If seen early adopt antiphlogistic measures; and when active is succeeded by passive congestion, give two or three grains of acetate of lead three times a day, to prevent the insidious drain on the system, and then give muriated tincture of iron, to repair the anæmic state of the system. (Dr. O'Ferrall, p. 134.)

Diabetes Mellitus.—The sugar in this disease is formed not only in primary but also in secondary assimilation from the tissues, as the emaciation proves; hence the rigorous exclusion of non-azotized substances is not advisable, as it forces the diseases to attack the living tissues, therefore allow at least farinaceous food. (Dr. Dick, p. 132.)

Exalt the tone of the secreting capillaries of the kidneys by balsams, ammonia, strychnia, and other excitants, when the perspiratory secretion is suppressed; if it be not, give chalybeates, alum, sulphate of zinc, or other metallic astringents; give a moderate portion of animal food, porter, &c., but do not enjoin a strictly animal diet.

Diabetes Insipidus.—Give antispasmodics and mineral tonics, and apply stimulating liniments to the spine.

Purulent Deposits in the Urine.—Give tonics, to subdue the asthenic inflammation of the mucous membranes; decoction of the leaves of chimaphila corymbosa, diosma crenata, arctospaphylos, uva ursi, or the root of cissampelos pareira, combined with mineral acids; also give chalybeates.

Hæmaturia—Treat this disease in the same way as other vicarious discharges: give astringents, as tannin; or styptics, as oil of turpentine; when you give the latter be on your guard against nephritis. (Dr. Aldridge, p. 140.)

Bright's Disease, or Albuminuria—Enjoin a general tonic regimen, avoid as articles of food, fat and other highly carbonised materials, attend to the functions of the skin and bowels, relieve congestion of the gland, and if necessary, use small bleedings. (Dr. Johnson.)—Make use of cautious small blood-lettings in the early stages, particularly if acute; give hydrogogue cathartics, and improve the general health: do not deplete where the disease is chronic. (Dr. Williams.)—In the very early stages, change the mode of life and habits of the patient, enjoin pure air and careful attention to diet and exercise; in this stage application for relief is seldom made. In the second and third stages, relieve congestion; promote the flow of urine and the action of the skin,

and prevent the deposition of fatty matters by a diet which contains neither fat, nor butter, nor any of those non-azotized substances nearly allied to it, as starch, sugar, potatoes, &c. (Dr. Todd, p. 114.)

In the *acute* form, remove congestion of the kidneys by bloodletting, regulated according to the intensity of the disease and the patient's strength; restore the function of the skin, by keeping the patient in a warm atmosphere, giving mild diaphoretics, and the use of the warm or vapour bath. Dr. Barlow gives tartar emetic. Next, remove the dropsy, by diuretics and purgatives, nitrate of potash (in doses of two scruples or more) with digitalis and cream of tartar, the nitrate should be largely diluted.

In the *chronic* form, first attend to the function of the skin, by warm clothing, diaphoretics, and the warm bath. Give tincture of cantharides in doses of from four to twelve drops, in some emulsion (Dr. Bright,); Dr. Wells and M. Monneret advise thirty to sixty drops in 24 hours; or give ioduret of iron, (M. Gutbrod); or hydriodate of potash, and use iodine ointment, (M. Alken); or give chalybeate tonics, saline purgatives, and nutritious diet, (Dr. Rees); or equal parts of tinct. of cantharides and tinct. of sesquichloride of iron, (Dr. Copland).

Treat the *dropsy* with cream of tartar and digitalis, (Dr. Christison), give from a drachm to a drachm and a half of the former three times a day, and at the same time a pill containing one or two grs. of powdered digitalis, or twenty drops of the tincture in cinnamon water; give a blue pill (grs. 5) every night for four or five nights. Diuresis may often be established by an emetic of ipecac. and tartar emetic, or by a hydrogogue cathartic; should these fail, give squills, broom, spirit of nitric ether, or Hollands and water, or carbonate, nitrate, or acetate of potash; or decoction of horse radish, (Rayer.) Diuretics do not cure the disease, they can only relieve the dropsy.

Try seidlitz or Pullna water; cream of tartar in half-ounce doses (Rayer); give five, seven, or nine grains of gamboge, once every two days, triturated with bitartrate of potash, to prevent griping. Combat the concomitant affections of the digestive organs with creasote (Dr. Christison); give it as a pill, one drop of creasote, two grains of rhubarb, and one grain of extract of gentian, for the mass; or with the sedative solution of opium; or with extract of opium and nitrate of silver, half a grain of each in a pill. Apply sinapisms, turpentine epithems, or a cantharides blister, externally; sprinkle the blistered surface with muriate of morphia; check diarrhœa by chalk, astringents, and opiates; or give acetate of lead with opium, or strychnine with opium. (Dr. Wood, p. 130.)

Incontinence of Urine, (*the result of Stricture.*)—Endeavour to remove or relieve the stricture by bougies or catheters; when these fail the lancetted stilette (Mr. Stafford's), may be sometimes resorted to with advantage. It is a dangerous instrument,

and should be used with great caution. It should be firmly pressed against, and then through the stricture, and after it be withdrawn a catheter should be introduced. (Lawrence.)— The tone of the bladder, after retention of urine, may be restored by giving ergot of rye in two-scruple or drachm doses, twice a-day, about an hour or two before the bladder begins to feel uneasy from the accumulation of water. (Braithwaite, p. 366.)

Lithotrity.—The best instrument for performing this operation with, is the *two*-branched curved instrument of Baron Heurteloup. A new instrument, by means of which a large calculus may be ground to powder in a few minutes, by oscillatory movements, it is worthy of attention. (M. Leroy, p, 336.)

Prepare the patient for the operation, by enjoining a light diet, abstinence from fermented liquors, clear out the bowels, and order the hip-bath; if the urine be acid, give alkalies combined with uva ursi or Peruvian bark; if alkaline, give the mineral acids; and if mucous deposit, infusion of Pareira brava; enjoin absolute rest, and use occasionally an anodyne enema. The urethra is to be gradually dilated, if necessary; when preternatural contraction of its orifice exists, divide it. Introduce the catheter frequently, as it allays the irritability of the bladder and urethra. The objects of the operation are to reduce calculi within the bladder to such a size, that the portions may be removed or discharged through the natural passages, to effect this by such means as shall excite no dangerous irritation in the urinary organs, and to free the bladder from the small fragments which remain. Great care should be taken that the case be a suitable one for the operation, as in some cases cystotomy must be preferred. Lithotrity may be performed where the bladder is perfectly healthy and the stone is small; and it is decidedly advantageous where there is phthisis or albuminuria. It is a great and valuable addition to chirurgical therapeia, but cannot be considered as a substitute for cystotomy, since there are numerous cases in which the last operation will prove the safest and most effectual.

Cystotomy, for example, is preferable in boys before the age of puberty; it is so simple and the urethra is so small as not to admit of the lithotrite. Cystotomy is also preferable in the female; also where the calculus has attained a very large size; also where the prostate gland is enlarged, unless the calculus be of very small size. (Sir P. Crampton, p. 327.)

Prostate Gland.—(*Enlargement of.*)—Charge a bougie with iodine, or iodide of potassium, and then dip it into melted tallow, so that a coating may be formed upon it; then introduce it up the urethra to the part desired, and let it rest upon it until the tallow melts, and the iodine, &c., comes in contact with the diseased part. The preparation of iodine must at first be very mild; a grain of iodide to the drachm of lard, gradually increased in strength as the patient can bear it, to two, three, four,

five, and even ten grains, or a scruple, to the drachm; after this add iodine to it, half a grain gradually increased. The bougie must be introduced with great care. (Mr. Stafford, p. 336.)

AFFECTIONS OF THE ORGANS OF GENERATION.

SYPHILITIC AFFECTIONS.—*Chancre.*—Wash the part well with warm water, and then apply the solid nitrate of silver; it will completely destroy the affection, if not more than of three days' standing. If it be a pustule, evacuate its contents, and the walls of the pustule are to be well cauterised. When there is a chancre of the frenum, it is more readily healed by dividing it, and cauterizing the whole of the divided surface. To check discharge, apply a solution of pure tannin,—two grs. to the ounce of water; or sulphate of zinc solution, in private practice, as the former tells tales by staining the linen. The caustic should be reapplied as soon as the eschar is removed, or about once in twenty-four hours. If lint have been applied after the caustic, take care to soak it well before you remove it, or the eschar may be detached, and the part made to bleed. If the case be seen early, one or two burnings will suffice; if at a more advanced period, it must be repeated at intervals of twenty-four hours,—for a week or ten days, or as long as we consider any virus is secreted by the sore, which is known by the ulcers remaining stationary, and the surface being covered with a yellow pellicle; when becoming healthy, granulations spring up and the sore heals. Caustic is not so efficacious when the chancre is situated on the frænum, orifice of the urethra, around the prepuce, or on the fourchette in the female;—enjoin rest and strict attention to cleanliness, and avoid rupturing the cicatrix. (Acton, p. 344.)

Buboes.—Apply a blister the size of a crown for twenty-four hours, then raise the enticle, and apply a pledget of lint of corresponding size, well saturated with a solution of bichloride of mercury (a scruple of the salt to one ounce of spt. vini rectif.); keep it in situ from two to four hours, and then apply cold applications for some hours; an eschar is formed, which will be thrown off, and the tumour will be dispersed. (Malapert, p. 350.)

Gonorrhœa.—Inject the urethra with a solution of copaiba. (Ricord, p. 365.)

Chordee.—Give from 25 to 50 minims of the vin. sem. colchici, for several successive nights. (p. 366.)

Or, vin. colchici, ʒij.; magnes carb. ʒj.; iodide of potassium, ʒss.; aquæ, ℥vss. M. ʒj quartis horis sumend. Or give a combination of iodide of potass and decoct. sarzæ comp. (p. 366.)

Gleet.—Apply the following ointment, which answers much better than the nitrate of silver: kino, ten parts; sulphate of zinc, one part; lard, twenty parts. (Dr. Leroy, p. 359.)

Stricture.—Dilatation.—There are three modes of performing dilatation. 1. Slow or permanent; the catheter is left in the urethra and changed every three or four days. 2. Continuous or sudden; changing the catheter every six or seven hours. 3. Temporary or progressive; retaining the catheter or bougie from five minutes to one hour. Never employ force in introducing a bougie, and when you increase the size do not do it from day to day, but at the same sitting, i. e. commence with that which passed freely the day before.

When a bougie cannot be passed, but the urine flows off, use Dr. Leroy's apparatus for keeping the pressure of a bougie constantly against the part; or press the end of the instrument against the obstacle for a quarter or half an hour daily, and after each sitting, try to pass a small bougie; when these means fail, apply the caustic bougie.

When the stricture produces complete retention of urine, endeavour to pass bougies in conjunction with bleeding, baths, &c.; try the application of tobacco moke; should these fail, press as small catheter against the obstacle for an hour. Cut down upon the urethra posterior to the obstacle, but should a calculus be there detained, cut through the rectum. If necessary to puncture the bladder, do it through the rectum. M. Lallemand cuts down on the strictured part itself. (Dr. Leroy d'Etiolles, p. 354.)

Secondary Form of Syphilis.—Give the proto-iodide of mercury, and should it occasion irritation in the bowels with diarrhœa, combine it with opium, Let the diet be simple, avoiding all stimulants whether solid or fluid; the diet, however, should not be debilitating but nutritious. Cold and damp air is very injurious; fresh air is highly necessary. (Ricord, p. 346.)

Tertiary Form of Syphilis.—The characteristic of these symptoms, is their not being transmissible hereditarily. They are manifested chiefly in the subcutaneous or submucous cellular tissue, in the fibrous, osseous, cartilaginous, muscular or nervous tissues, and in organs in their locality. The remedy most to be depended upon is mercury. (Ricord, p. 346.)

PARTURITION, AND DISEASES OF WOMEN.

Placental Presentation. — Whenever the condition of the mother permits, *turn* the child, and extract the placenta. The placenta should never be detached first, unless the danger to the woman is so great from exhaustion, as to render turning hazardous; or, unless there exists some obstacle to the extraction of the child, either from distortion of the pelvis or from tumours.

Neither delivery by turning, nor detaching the placenta, ought ever to be attempted, until the cervix and os uteri will safely allow the introduction of the hand. Until this is the case, strict rest, the application of cold, and the *use of the plug*, will be required.

Detaching the placenta will be found the best line of practice, 1st, in severe cases of unavoidable hæmorrhage, with placenta previa, complicated with an os uteri so insufficiently dilated and undilatable, as not to allow of turning with safety; 2nd, in many of the cases in which placental presentation is connected with premature labour, and imperfect development of the os and cervix uteri; 3rd, when the uterus is too contracted to allow of turning; 4th, when the pelvis or passages of the mother are organically contracted; 5th, in cases of such extreme exhaustion of the mother, as forbid immediate turning or forced delivery; 6th, when the child is dead, and when it is premature and not viable. (Drs. Simpson, Radford, &c., &c., p. 184.)

Galvanism.—This powerful agent may be used to induce or increase uterine action in cases of hæmorrhage, before, during, and after labour; in cases of placenta previa where it is inexpedient to rupture the membranes and turn; in internal hæmorrhage, depending upon uterine inertia. Its effects are instantaneous, and much more to be depended upon than ergot, although it is advisable to try the secale first, and it will be found especially useful in those cases where exhaustion is so great as to render it dangerous to deliver the child in the ordinary way. (Mr. Dorrington.)

In cases of accidental hæmorrhage, in the latter months of gestation, where the os uteri is rigid and nearly closed, and the flow of blood cannot be arrested by ordinary means, and more especially if there be uterine inertia, galvanism will be useful. In applying galvanism, one conductor should be passed up the vagina to the os uteri, in which a moistened sponge is introduced, and the other to the abdominal parietes, over the fundus, in order to pass the current through the long diameter of the uterus, or they may both be applied externally in the short axis. The galvanic action should not be continued too long, and should be interrupted, so as to allow the uterus intervals of rest, and so to imitate nature's operations. (Dr. Radford, p. 419.)—Galvanism may also be used as a dernier resort in hæmorrhage during the first months of pregnancy. (Mr. Wilson, p. 422.)—Electro-magnetism may be applied in cases of uterine inertia during labour. (Mr. Clarke, p. 423.)

Uterine Hemorrhage.—When danger to life is imminent, give opium freely; five grains for the first dose, and two or three every hour or half hour afterwards, until the pulse becomes distinct, the breathing easier, and the tossing about in the bed allayed. At the same time, give warm wine and brandy, and apply heat to the extremities. (Dr. Griffin, p. 424.)

Uterine Hemorrhage after delivery.—In cases where, on previous occasions, there has been hemorrhage after the birth of the child, prepare an infusion of secale, ʒj. to ℥iv. of boiling water, and when the child's head has just cleared the external

orifice, give half of it (along with the powder); and when the child is entirely expelled, give the remainder. (Dr. Beatty, p. 425.)

Give ergotine in doses of two grains every two hours. It has been found serviceable in cases of uterine hæmorrhage, whether acute or chronic, and dependent on a dynamic or an organic cause. (Ebers, p. 425.)

When hæmorrhage becomes alarming after the expulsion of the placenta, turn the patient on her back, and grasp the uterus firmly with the hand, through the abdominal parietes, until it contracts; then take a small bowl or basin capable of holding twelve or fourteen ounces, having a thick smooth edge, and invert it over the body of the compressed uterus, taking care that the whole of it is compressed within the cavity of the basin, which is to be confined in situ with a bandage. (Mr. Harvey, p. 426.)

Mr. Pretty has invented an apparatus by which he applies pressure to the abdomen to avert hæmorrhage after delivery; it consists of a central and two side pads, fastened by a strap, and tightened by means of a tourniquet; it is portable, and easy of application. (Mr. Pretty, p. 427.)

Transfusion.—This should be adopted as a last resource when the patient is sinking. Mr. Brown reports a successful case in which he performed it, where there was the most alarming prostration, but no extraordinary discharge of blood. (p. 428.)

Forceps, Application of, in Occipito-posterior Positions.—In these cases the forehead should be made to rotate backwards, and the occiput forwards; i. e., the extraction of the head with the forceps should be an exact imitation of the mechanism of the expulsion of the head by nature. (Dr. Simpson, p. 431.)

Forceps, How to Apply.—Having ascertained the exact position of the head, introduce the hand, well smeared with lard, within the os uteri; search for, and pass the fingers over the ear, so as to guide the blade over that organ, whatever may be its position. When the instrument is locked, do not tie the handles with tape, as it keeps up a degree of pressure on the child's head not consistent with its safety. In acting with the forceps, always bear in mind the different axes of the pelvis, viz., of its brim, cavity, and outlet; therefore, keep the handles of the instrument back to the perineum, till some part of the occipital bone has cleared the arch of the pubis, and when this occurs, gradually bring the handles towards the pubis, when the chin will pass over the perineum. The three powers of the forceps are brought into operation, viz., compression, traction, and leverage; but compression ought never to be made beyond diminishing the child's head to *three* inches, indeed, instruments are seldom constructed to admit of more. (Dr. Wilson, p. 439.)

Uterus, Inversion of, from Short Funis.—When this occurs, lose no time in separating the placenta from its attachments, and with the clenched hand replace the uterus; taking care not to withdraw the hand until the uterus contracts. (Mr. Smith, p. 452.)

Prolapsus Uteri.—Mr. Eagland, surgical instrument maker, of Leeds, has constructed a very efficacious instrument for keeping the prolapsed womb in position. (For a description and wood-cut, see article, p. 454.)

Speculum Uteri.—Dr. Protheroe Smith's new speculum uteri consists of a glass cylinder fitted to an outer one of metal, within which it slides. The inside of the metallic tube is highly polished, the reflecting powers of which are increased by the glass cylinder; the edge of the smaller or uterine extremity, is carefully rounded into a smooth ring, which projects slightly from the inner surface. In its side is cut an oval aperture, of about three inches in length, and two in breadth, extending to within half an inch of the end of the cylinder. Its other extremity consists of a rim, which projects about a line from the external surface of the tube, having its surface blackened for the absorption of any rays of light, which might otherwise be reflected, and impede the view by their dazzling effects. There is also a corresponding rim to the glass tube, by which it is more conveniently withdrawn from the metallic cylinder. (Dr. Smith, p. 443.)

Dr. Adam Warden has invented a new speculum uteri, particularly adapted for examining the posterior lip of the os uteri. (p. 449.)

Mr. Fergusson of King's College, has also recommended a speculum uteri, in which the reflecting surface, which is very brilliant, cannot be tarnished with any discharges or lotions. It is a very cheap instrument. (p. 450.)

Ricord's speculum uteri consists of two valves, united about the middle point, allowing both extremities to be widely opened; the narrowest part is thus placed at the vulva. To each valve a handle is attached, by which means space is gained, and the light falls upon the interior uninterruptedly, and pressure upon them causes a dilatation of the two extremities which can be maintained, diminished, or increased by means of a screw. (p. 451.)

Menorrhagia.—Give oxide of silver in half grain doses twice or thrice a-day. It will be of most use when the hæmorrhage is of a secretive character, occasioned by local excitement, and not from the rupture of blood-vessels. (Mr. Butler Lane, p. 107.)

Give nitrate of silver internally. Argent. nit., gr. iij.; aquæ distillat. ʒij; solve. Give ten drops three times daily, and gradually increase the dose to fifteen drops. (Dr. Ditterich, p. 455.)

Pruritus Vulvæ.—Apply thrice a-day to the affected parts, by means of a piece of sponge, the following lotion:—Sodæ borat.,

℥ss.; morphiæ sulphat., gr. vj.; aquæ rosæ distillat, ℥viij. M. ft. sol. (p. 455.)

AFFECTIONS OF JOINTS.

KNEE-JOINT.—(*Inflammation of Synovial Membrane.*)—Keep the joint perfectly at rest; for this purpose, when the disease is *chronic*, apply splints of thick leather, one on each side of the joint, keeping them in place with a bandage. Steep the leather well in hot water, so as to make it exactly fit the joint. When the cure is nearly completed, the patient should wear an elastic bandage, so as to allow of a little motion, within certain limits, and the heel of his shoe should be raised a little, to keep the knee slightly bent.

In the *acute* disease, use general antiphlogistic measures, as well as the local abstraction of blood. After giving a brisk purgative, then give twelve minims of vin. colchici in a saline draught three times a-day; in two or three days stop its exhibition, and after an interval of a day or two give it again; it is most useful when there is a gouty diathesis, with lithates in the urine; an occasional purgative is necessary during the administration of the colchicum, and also small doses of blue pill to keep up the secretion of bile which colchicum diminishes. Give mercury so as to affect the system; this may be done not only in the gouty diathesis, but also where there is rheumatic inflammation, and combine it with opium, as in iritis.

In *chronic* inflammation the same measures as in the acute, only not quite so active; leeches; blisters, apply them in succession, or keep one open with savine cerate; give colchicum as an alterative, two grains of the extract with as much blue pill, every night, and an aperient every third or fourth morning: or give the acetous extract, with calomel and comp. ext. of coloc., every second or third night. Give, also, iodide of potassium in small doses, combined with alkaline remedies. In slight cases, use liniments to the joint, lin. vol. camph., and sp. terebinth.; or olei olivæ ℥jss.; acid sulph., ʒj., and sp. terebinth. ℥ss.; or paint the knee with a solution of iodine. When ulceration of the cartilages is going on; give mercury so as to affect the system, calomel and opium two or three times a-day; mere alterative doses will not do: in a few days the pain will be quite relieved. (Sir B. Brodie, p. 217.)

Abscess.—Make a free opening, and keep the joint in a state of absolute repose by means of leathern splints, or by supporting it with pillows and cushions. The articular cartilages will have become absorbed, and recovery by anchylosis is the result; the joint during recovery must be supported with leathern splints; or if the leg be bent on the thigh, use the screw instrument, with splints at the posterior part of the leg and thigh. (Sir B. Brodie, p. 222.)

Gouty Inflammation of.—Some of the smaller joints are affected first, and there is seldom much effusion within the joint. Give a grain of acet. ext. of colchicum, a grain of blue pill, and three grains of ext. of hop, every night, with a gentle aperient every third or fourth morning; after giving these pills for a fortnight, stop them for two months, and then give them a fortnight again, and so on: give also a grain and a half, or two grains of iodide of potassium, with ten or twelve grains of bicarbonate of potash twice a-day, for six or eight weeks at a time. This system must be continued, with occasional intermissions, for one or two years, or even longer. This chronic gouty affection is not in itself dangerous, but it shows a bad constitution, and the person thus affected is liable to other diseases. (Sir B. Brodie, p. 217.)

Scrofulous Disease of.—Never abstract blood, nor make use of counter-irritation. Here, as in all diseases of joints, a state of perfect repose is necessary; use the leathern splints. As soon as the digestive organs are brought into a proper state, give tonics, particularly chalybeate tonics. To children give the vinum ferri of the old Pharmacopœia, for three weeks, and then omit it for ten days, and so on for several years, so as to improve the weak constitution. If fever be produced, decrease the dose, or omit it altogether for a while; or give the tinct. ferri mur.; or the syrup of iodide of iron; or the latter and the vin. ferri alternately. When you have a patient with whom no form of iron will agree, then give quinine, bark, or alkaline solution of sarsaparilla; the latter is very useful to delicate children. Change of air is highly beneficial, the sea-side; when the joint has become stiff, do not use force to straighten it; it should be done gradually, by means of a screw apparatus; if an abscess forms in the joint, continue the use of the splints, but have them lined with oil-silk. If the disease have been neglected, or it has been found impossible to save the joint, amputate as soon as possible. If, by examination with a probe, it is found that there be a piece of dead bone within the joint, so that it cannot exfoliate, the sooner the limb is amputated the better. Bony anchylosis takes years for its completion, so that if the limb be bent there will be plenty of time to get it into its proper place. (Sir B. Brodie, p. 223.)

Primary Ulceration of the Cartilages.—Keep the joint perfectly at rest, and use setons, issues, blisters, and counter-irritants. The great remedy is mercury; two grains of calomel and one-third of a grain of opium, three times a-day, until the gums are affected. Where mercury cannot be borne, give sarsaparilla and iodide of potassium; sarsaparilla should also be given after the course of mercury. Ung. hydrarg. may be rubbed into the thighs where it cannot be borne internally. (Sir B. Brodie, p. 225.)

Morbid Alteration of structure of the Synovial Membrane.—Apply pressure by means of several alternate layers of diachylon plaster and bandage; and afterwards by leathern splints, and a firm

bandage; attend also to the general health. (Sir B. Brodie, p. 227.)

Loose Cartilages in the Knee.—Remove them by operation; get the cartilage fixed over the outer or inner condyle, and while it is retained in that situation, divide slowly, the skin, cellular membrane, fascia, ligaments, and synovial membrane; hold the knife with a loose hand, or the cartilage will be pressed into the joint; lay hold of it with a tenaculum, but should it recede within the joint never grope for it, but bring the edges of the wound together, and perform the operation at some other time.—A valvular operation has been proposed. (Sir B. Brodie, p. 228.)

Hip-Joint, *Inflammation of.*—Put the patient under mercurial influence. Before commencing treatment determine the probable duration of the disease, as the efficacy of the action of mercury depends much on the stage in which it is used. (Dr. O'Ferrall, p. 229.)

Dislocations.—Instead of using extension by the hands of assistants in reducing dislocations, make use of a little click wheel, fixed to the wall, and a rope attached to it; the extension is not only made more easily, but much more gradually. (Mr. Terrey, p. 240.)

Compound dislocation of the Astragalus.—When it is necessary to remove the astragalus, or saw off the end of the tibia, in order to return the bones to their place, never make a fresh incision to effect it, if there is already an extensive wound in another direction; rather amputate the limb at once, the chances of recovery will be so much greater. (Solly.) The late Mr. Colles, of Dublin, was opposed to amputation in compound dislocation of the ankle joint; and when advisable, he thought it best to wait until the symptomatic fever had subsided. (p. 238.)

Immobility of the Lower Jaw—Keep up mechanical extension for a considerable period, gradually increasing it. An excellent instrument for this purpose has been constructed by Mr. Gay, of Leeds, under the direction of Mr. Teale. (See wood-cut. Mr. T. P. Teale, p. 234.)

AFFECTIONS OF THE SENSES.

Eye, *Inflammation of.*

Acute.—Bleed and give nauseating medicines, purgatives, and low diet, and stimulate the liver, kidneys, and skin, to rid the fluids of pernicious ingredients. In the second stage, to prevent or arrest the consequences of inflammatory action, give mercury or iodine, bark, colchicum, turpentine, &c. In the third stage, when the inflammatory action has subsided, apply belladonna, and give mercury or iodine in smaller doses, and for longer periods, with local stimulation and cutaneous irritation.

When the disease has been treated with mercury, and returns, try depletion and antimonials, with confinement to bed, and low living, for two or three days before you again resort to that remedy. Give tartrate of antimony or James's powder, so as at first to cause nausea, and afterwards diaphoresis. Mercury is the sheet anchor, given so as just to affect the gums: at first, give three grains of blue pill, three grains of compound colocynth powder, and one-eighth or one-tenth of a grain of tartrate of antimony three times a day, for a couple of days; then five grains of blue pill, with the same quantity of antimony, for two days more; and finally five grains of blue pill three or four times a day. If it affect the bowels, add a little opium to it. This produces a mercurial effect upon the system in seven or eight days. Or two grains of calomel and a quarter of a grain of opium may be given every four or six hours, if we wish to affect the system sooner. The length of time we are to continue the mercury must be decided by its effects.

Iodine, turpentine, colchicum, and bark, are valuable where the inflammation is modified by specific disease, or constitutional derangement, or where mercury has already been given, or cannot with safety be used.

From the very commencement of an attack of iritis, extract of belladonna should be used. Mix it with water until it acquires the consistence of cream, and paint the eyelid, brow, and upper part of the cheek with it; let it dry, and then apply it again, and cover it with a little damp linen, and keep it moist by applying a lotion, made with two drachms of the extract to eight ounces of water. If its application be not found comfortable, it need not be applied more than once or twice in twenty-four hours. When its application to the skin does not affect the pupil, drop a little of the solution upon the conjunctiva, even during the inflammatory attack; its effects soon pass off. It is best to apply it in the morning. (Dr. Jacob, p. 384.)

In the external forms of ophthalmia, apply an ointment of oxide of silver, a drachm to the ounce. This is very analogous to Mr. Guthrie's black ointment. (Mr. B. Lane, p. 106.)

Accidental Cataract.—Two modes of treatment: 1st. To allow absorption to take place; the inflammation to be reduced by leeches and mercurials, as in internal ophthalmia; apply belladonna so as to dilate the pupil.

2nd. Remove the fluid mass of cataract by extraction of the lens through a small incision in the cornea, (Barton and Gibson); make the puncture at the temporal margin of the cornea with the extraction knife, or with Mr. Walker's instrument, which combines the properties both of scoop and knife, and carry the point of the instrument into the pupil, when the lens will be discharged with the aqueous humour. (Mr. Walker, p. 392.)

Depression of the Crystalline Lens.—The lens should be disengaged from its capsule in depressing it. To accomplish this, introduce the cataract bistoury through the coats of the eye, about a line and a half from the margin of the cornea; it penetrates the vitreous humour, and forms a breach in it, at the proper place for the reception of the lens when depressed; the point of the instrument directed towards the lens, is to be pushed across the eye to its opposite side, then penetrate the posterior part of the capsule, and, by drawing it outwards, incise it across its middle; then push the point of the needle between the lens and the iris, its flat side placed on the lower part of the lens, and press it backwards and upwards, then shift the point of the needle forwards upon the lens, and this presses it backwards into the breach of the vitreous humour, from whence it does not rise. (Dr. Watson, p. 391.)

Wounds of Eyelid.—If a large piece of skin be lost, and the edges cannot be united, subsequent ectropium is avoided by making an incision a quarter of an inch from the edge of the wound, which then allows the edges to be united. (p. 381.)

Fistula Lachrymalis.—Dilate the nasal duct by means of Morgan's sound and catheter; pass the sound along the floor of the nose, directing its point outwards, until it lies fairly below the inferior turbinated bone, then direct the point of the instrument upwards, and move it gently backwards and forwards along the inferior surface of the turbinated bone, until a little cartilaginous ridge is felt—this is the orifice of the duct; depress the handle of the instrument, and its point glides into the duct. No force must be used, as the bony structures are very delicate; repeat it daily until the resistance is overcome, and then keep the passage clean by injections of warm water. When well, the patient should be taught to pass the instrument, to clear away collections of mucus. This instrument supersedes the use of the style. (p. 390.)

Skin Diseases.—*Chronic Eczema of the Face.*—Give 3 or 4 drops of liq. arsenicalis three times a day, and cover the part day and night with lint spread with zinc ointment, or with ung. hyd. precip. alb.: or, give five grains of Plummer's pill every second night, and a saline draught twice a day, giving at the same time a course of Harrogate waters; regulate the diet, avoiding all stimuli. Where the temperament of the patient is irritable, arsenic and cantharides aggravate the disease.

It often attacks the ears of young females in whom menstruation is irregularly performed; this function must be estabiished by the usual means; apply bread and water poultices to the part during the night, and cover it with rags spread over with zinc ointment during the day; and give 10 grains of pil. aloes c. myrrh. every second night at bed time. After using these means for a

week or two, give 5 minims of tinct. of cantharides, and 30 of liq. potass. twice a day. (Mr. Erichsen, p. 369.)

Eczema of the Scrotum, Penis, and Anus.—Cover the parts with lint, wet with lead lotion, and enclose them with oil-silk, in order to keep off the air, and to prevent urine getting upon the part. Give a small dose of hydr. c. creta at night, and a dose of castor oil in a morning; in a few days substitute zinc ointment for the lotion, and give small doses of liq. potassæ, and 5 grains each of calomel and magnesia, twice a day. If it be of long standing, enjoin a strict diet, abstinence from fermented liquors, salted and heating articles of food, and give 20 minims of liq. arsenici et hydrag. iodidi twice a day, with 5 grains of Plummer's pill at bed-time, and apply a mixture of zinc ointment and the ung. plumbi acetat. to the parts by means of a piece of lint cut to the proper shape. The treatment must be persisted in for a length of time. A little extract of belladonna rubbed down with the ointment, often succeeds in allaying the irritation. (Mr. Erichsen, p. 372.)

Eczema of the Scalp.—If occurring to a child, otherwise healthy, about the period of dentition, be careful how you check the eruption. Cut the hair, apply bread and water poultices, and subdue irritation by the application of rags dipped in olive oil, or smeared with zinc ointment; or sprinkle the part with the nurse's milk. Give small doses of hydrarg. c. creta and castor oil, and lance the gums, if necessary. Fluid magnesia is often useful. If it becomes inveterate, wean the child on beef-tea, broth, and a nutritious diet, and give mild tonics, a few drops of tincture of ammon.-chloride of iron, or iodide of iron, twice a day, (from half a grain to two grains of the latter); a great part of the treatment consists in keeping the scalp so covered as to prevent the access of air.

When it becomes chronic and inactive, and presents a furfuraceous appearance, have recourse to gentle stimulants; a lotion composed of from one to two drachms of sulphuret of potass, either alone or combined with an equal quantity of the carbonate of the same alkali, in a pint of plain, or of lime water; wash the head with this lotion three times a day; at the same time, every night after the last application of the lotion, apply an ointment composed of from a scruple to half a drachm of carbonate of potass to an ounce of lard, or one of creasote in the same proportion, or of white precipitate; or use the ung. hydr. nit. dil., or the sulphur ointment, or a mixture of this and tar or creasote ointment. Do not use the oiled silk cap; it confines the perspiration and soddens the skin, producing a state of passive congestion which we wish to get rid of. (Mr. Erichsen, p. 376.)

Chronic Eczema of the Hands.—In the early stages apply water-dressing by means of oiled-silk gloves or finger stalls, and at a more advanced period, a solution of nitrate of silver, (grain j. to

the ounce), instead of the water dressing; or a solution of carbonate of soda (grain ij. to iv. to the ounce); or the following lotion: acid hydrocian., ʒss.; zinci oxidi, ʒj.; aquæ rosæ, ℥viij.; or cover the hand with the ung. hydrarg. precip. alb., either alone or mixed with citrine ointment.

If the disease only occupy a small patch, cover it with a slice of lemon. Its speading may be checked by applying the solid nitrate of silver around the part. Constitutional treatment must also be adopted: remove any gastric, intestinal, or uterine disturbance, and give vegetable bitters, nitric acid diluted, or small doses of bichloride of mercury; the two latter may be given in infusion of bark. If the disease be of very long standing, give Fowler's or Donovan's solution. The hands should be kept at rest. (Mr. Erichsen, p. 678.)

Chronic.—Apply tar externally; give it also internally in capsules. (p. 381.)

Pityriasis.—External applications of a soothing nature; baths medicated with mucilage of linseed, milk, yolk of egg, &c.; at the same time give demulcents, diuretics, &c. to increase the renal secretion. Cover the parts over with glycyrrhine; it remains fluid, and resists evaporation under any temperature to which the body is exposed. It is abundant in the refuse of the soap-maker. (Mr. Startin, p. 381.)

Itch.—Immerse the hands of the patient in an alcoholic solution of stavesacre for half an hour together, two or three times, and the acarus scabiei will be destroyed. (Dr. Burgess.) Use a lotion made of an ounce of sulphate of copper to a pint of water: wash off the scabs before using it. It is an almost certain cure. (Mr. Lloyd.) Use a lotion of iodide of potassium in the day, and sulphur ointment at night; a cure may be expected in seven days. The lotion should be ʒi. of iodide to ℥viij., or ℥xvj. of fluid. (Dr. Ward, p. 382.)

Warts.—Apply hydrochlorate of ammonia dissolved in water, or hydrochlorate of lime; persist in their application for some time. (p. 384.)

Syphilitic Alopœcia.—Cut the hair close, and use warm baths; and then apply the following liniment:—Equal parts of rectified spirit, Eau de Cologne, and castor oil; or equal parts of honey-water and tinct. of cantharides. Should little red spots or blisters be produced, cease the application for a short time.

Lichen, Lepra, Psoriasis, Impetigo, &c.—Frequent warm baths, taking care to soak the head well; and cover the spots night and morning with olive oil, ℥ss.; citrine omit. ʒi.; M. Make a liniment. Or use the following ointment:—purified beef marrow, sixteen parts; sulphur ointment, sixteen parts; turpeth mineral, two to four parts; essence of lemons sufficient to scent it. (Ricord.)

Mucous Tubercles.—Use a dilute solution of chloride of sodium; dry the parts and sprinkle them over with calomel. Great cleanliness is necessary; do not use ointments.

Eczema Impetiginoides.—Cut the hair close, and apply water dressing, or lint dipped in an aqueous solution of opium; do not apply ointments. It should be a rule never to apply greasy substances to any eruption attended with oozing of fluid, since it mixes with the secretion, becomes rancid, forms a crust, the edges of which become excoriated, and what was an effect becomes a cause of irritation. Paint gummata and nodes with tinct. of iodine; it may also be applied to unhealthy tertiary ulcers.

Give internally, in secondary forms of syphilis, iodide of potassium or mercury; some prefer the former as Dr. Williams, others the latter, as Sir B. Brodie. The following should be our guide in giving the iodide of mercury:—Secondary symptoms occurring after a course of mercury, will be benefited by a course of iodide of potassium. Secondary symptoms occurring where mercury has not been used, will not yield to the iodide, but will to mercury. In order to prevent the iodide from causing pain at the pit of the stomach, or heat at the back of the throat soon after swallowing it, dissolve two drachms in three ounces of water, and let the patient take a teaspoonful of this solution night and morning in a large cup of tea, and the same quantity in half a pint of beer or other fluid at mid-day; the dose to be continued, and increased according to circumstances. It is of no use increasing the dose, or, indeed, of continuing this remedy beyond a week or ten days, if no amendment is visible. If mercury has not been given for the primary symptoms, begin with it immediately when secondary symptoms appear. Ricord gives the pure mineral, but the hydr. c. creta will answer best. If the organs of digestion be impaired, use friction; direct the size of a horse bean of ung. hydr. to be smeared on the inside of each calf of the leg every night; do not rub it in, as you irritate the hair bulbs by doing so, and you produce subsequent tenderness. Direct your patient to sleep in old drawers, so as to keep the bed clean. Do not use the ointment to the thighs, as is usually recommended; it gets between the thigh and the scrotum producing eczema; it also dirties the patient's linen, and excites the attention of the washerwoman. Get the patient firmly under its influence before you discontinue the use of mercury. (Acton, p. 337.)

TOXICOLOGY.

Poisons.

Purified Animal Charcoal an Antidote to all Vegetable, and some Mineral Poisons.—This substance may be used as an antidote to opium and its active principles, (morphia, &c.); nux vomica and its active principles (strychnia and brucia); henbane, deadly

nightshade, bitter sweet, thorn apple, tobacco, hemlock, bitter almonds, prussic acid, the aconites, &c., &c., in fact to all vegetable poisons; to animal also, as cantharides. The carbo animalis purificatus of the pharmacopœia should be used, and in the proportion of half an ounce to a grain of morphia, strychnia, &c. It combines with and renders inert, vegetable and animal substances, and absorbs some mineral poisons, especially arsenic, and renders them harmless, and exerts no injurious effects on the body.

It should be rubbed in lukewarm water, so as to form a fluid of slight consistency, and thus given in quantities of from one to four ounces. Emetics also should be given; ipecacuanha, however, will not do, as the charcoal renders it inert. Give sulphate of zinc in ℈j. or ʒss. doses, or use the stomach pump, and then give more of the charcoal.

Might not this substance be tried to prevent the injurious effects of animal poisons, such as rabies, syphilis, poison of serpents, &c., applied in the form of poultice to the parts? (Dr. Garrod, p. 159.)

Prussic Acid, poisoning by.—Dash cold water on the patient; apply ammonia to the nostrils, and heat to the spine and feet; give an injection containing tincture of assafœtida, use friction with a flesh-brush to the skin; and as soon as the jaws become relaxed, and the patient can swallow, give an emetic, and afterwards some weak brandy and water, and strong coffee. (Dr. Gray, p. 163.)

Cause the patient to inhale the fumes of ammonia, when he has ceased to be able to swallow. (Mr. Hicks, p. 152.)

Opium, poisoning by.—After the stomach has been well evacuated, should the vital energies sink, make use of electro-magnetism; pass the current through different parts of the body, and gradually increase its power until it reaches its maximum intensity. Continue its use for a considerable period, until sensibility is not only evident but complete. (Mr. Colahan, p. 175.)

MATERIA MEDICA AND GENERAL THERAPEUTICS.

Aquæ Copaibæ vel Cubebæ.—1. Ol. copaibæ, (or cubebs), two ounces; water, five gallons and a half: draw over from three to four gallons. 2. Oil of copaibæ, (or cubebs), two ounces; magnesiæ carb., six drachms: Rub together and add four gallons or less, of water; filter.

Saccharised caustic solution of the oils of Copaiba or Cubebs.—Oil of copaibæ, (or cubebs), one drachm; caustic potash or soda, half an ounce; white sugar, six drachms. Twenty-four ounces of water to be added gradually.

Saponiform solution of these oils.—Oil of copaiba or cubebs, two ounces; caustic solution of potash or soda, one ounce. Rub together in a mortar, and add water as may be required.

These forms are not attended with the gastric and nephritic irritation usually met with while administering copaiba or cubebs. (Dr. Cattell, p. 364.)

BROMINE, *a substitute for Iodine.*—Where it is wished to substitute bromine for the tincture of iodine, use bromine one part, distilled water, forty parts, and give from five to six drops in some aqueous vehicle three or four times daily; for external use make the solution four times as strong as this.

Bromide of Potassium.—Dose from four to eight grains three times a-day; for an ointment, rub four parts with thirty-two parts of lard.

Bromide of Barium.—Dose from one to five grains three times a-day.

Bromide of Calcium.—Dose from three to ten grains in a pill with conserve of roses.

Bromide of Iron.—Dose from one to three grains in a pill with conserve of roses and gum arabic. (p. 199.)

DIGITALINE.—This substance may be given wherever digitalis is indicated; its advantage is, that it can always be exactly known what quantity of active principle is being employed. (p. 200.)

STRAMONIUM CIGARS are said to be a good remedy for asthma. (p. 202.)

AMPUTATION *at the middle of the Leg.*—The mortality attending the operation performed just below the knee is much greater than that lower down; it is also much more painful and not so easily performed; whilst in the latter case there is insured to the patient the use of the knee-joint. The two best methods of amputating the leg below the knee, are by the double circular, and anterior and posterior flap operation. In doing either, take care to leave sufficient muscle to cover the bones; and in the latter operation, the anterior flap, composed entirely of skin, should be at least half a diameter in length, and the projecting ridge of the tibia should be pretty deeply sawn off in a slanting direction. The middle of the leg, or just below it, is the best point at which the bones can be sawn. (Dr. Lawrie, p. 241.)

Venous Hæmorrhage during Amputation.—Apply a bandage from the extremity of the limb nearly to the point at which it is to be amputated; it must be applied carefully and exactly, and with all bearable firmness. (Dr. Hannay, p. 245.)

Circular Amputations.—Let an assistant dissect back the skin on one side, whilst the operator does the same on the other; this shortens materially the most painful and unseemly part of the operation. (Dr. Hannay, p. 245.)

Sutures after Amputation.—If the parts will not meet without dragging or putting on the stretch, do not use sutures, and never pass them through the muscular structure. (Dr. Hannay, p. 246.)

First dressing after Amputation.—Give thirty or forty minims of laudanum before the first dressing after amputation. particularly of a large extremity; it alleviates the shock which the nervous system is sure to receive; give it *half an hour* before the dressing. (Dr. Hannay, p. 246.)

Ulcer.—To an irritable ulcer apply oxide of silver in the form of ointment or powder. (Mr. Butler Lane, p. 106.)

Sore Nipples.—Apply ung. argenti oxidi, ʒi. to the ounce. (Mr. Butler Lane, p. 106.)

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TO

THE 9TH, 10TH, 11TH, AND 12TH VOLUMES

OF

THE RETROSPECT OF PRACTICAL MEDICINE,

POINTING OUT THE PARTICULAR VOLUME AND ARTICLE IN WHICH INFORMATION ON ANY GIVEN SUBJECT MAY BE REQUIRED.

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